

ATTACHMENT 11

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC.,)
)
Plaintiff,)
) Case No.
vs.) 5:14-cv-05344-BLF (PSG)
)
ARISTA NETWORKS, INC.,)
)
Defendant.)
_____)

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VIDEOTAPED DEPOSITION OF RAMANATHAN KAVASSERI
Palo Alto, California
Tuesday, February 23, 2016
Volume I

Reported by:
CARLA SOARES
CSR No. 5908
Job No. 2216982
Pages 1 - 195

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1 UNITED STATES DISTRICT COURT	1 APPEARANCES (Continued):
2 NORTHERN DISTRICT OF CALIFORNIA	2
3 SAN JOSE DIVISION	3 For the Witness:
4	4 FARELLA BRAUN & MARTEL LLP
5 CISCO SYSTEMS, INC.,)	5 BY: RODERICK M. THOMPSON, Attorney at Law
6)	6 Russ Building
6 Plaintiff,)	7 235 Montgomery Street
7) Case No.	8 San Francisco, California 94104
7 vs.) 5:14-cv-05344-BLF (PSG)	9 415.954.4400
8)	10 rthompson@fbm.com
8 ARISTA NETWORKS, INC.,)	11
9)	12
9 Defendant.)	13 ALSO PRESENT: Ramon Peraza, Video Operator
10 _____)	14
11	15 --o0o--
12	16
13	17
14	18
15	19
16 VIDEOTAPED DEPOSITION OF RAMANATHAN	20
17 KAVASSERI, Volume I, taken on behalf of Defendant,	21
18 at 601 California Avenue, Palo Alto, California,	22
19 beginning at 10:09 a.m., and ending at 4:26 p.m., on	23
20 Tuesday, February 23, 2016, before CARLA SOARES,	24
21 Certified Shorthand Reporter No. 5908.	25
22	
23	
24	
25	
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1 APPEARANCES:	1 INDEX
2	2 WITNESS
3 For the Plaintiff:	3 RAMANATHAN KAVASSERI EXAMINATION
4 QUINN EMANUEL URQUHART & SULLIVAN, LLP	Volume I
5 BY: MARK TUNG, Ph.D., Attorney at Law	4
6 555 Twin Dolphin Drive, 5th Floor	5 BY MR. SANTACANA 10
7 Redwood Shores, California 94065	6 BY MR. TUNG 186
8 650.801.5016	7
9 marktung@quinnemanuel.com	8 EXHIBITS
10	9 NUMBER DESCRIPTION PAGE
11	10 Exhibit 325 Ramanathan R. Kavasseri's 22
12 For the Defendant:	11 Responses and Objections to
13 KEKER & VAN NEST LLP	12 Defendant Arista Networks'
14 BY: EDUARDO E. SANTACANA, Attorney at Law	13 Subpoena to Testify at a
15 BY: RYAN WONG, Attorney at Law	14 Deposition
16 633 Battery Street	15
17 San Francisco, California 94111	16 Exhibit 326 LinkedIn page for Ram 24
18 415.391.5400	17 Kavasseri
19 esantacana@kvn.com	18
20 rwong@kvn.com	19 Exhibit 327 Document headed "A Simple 52
21	20 Network Management Protocol,"
22	21 dated 8/1988,
23	22 Bates ARISTANDCA00022432 - 2464
24	23
25	24 Exhibit 328 Document headed "Event MIB," 83
	25 dated 10/2000
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1	EXHIBITS			1	REFERENCED EXHIBITS	
2	NUMBER	DESCRIPTION	PAGE	2	(Not attached)	
3	Exhibit 329	Document headed "Commands for	94	3	Exhibit/Page	
4		which Cisco listed Ramanathan		4	92 89	
5		Kavasseri as 'Author/Originator'		5		
6		in Cisco's response to Interrogatory		6	--o0o--	
7		No. 16, Exhibit F (January 12, 2016)"		7		
8				8		
9	Exhibit 330	Document labeled "Ram Kavasseri,	101	9		
10		Garry Horoupian," dated 2/8/06,		10		
11		Bates CSI-CLI-00682250 - 2314		11		
12				12		
13	Exhibit 331	Document labeled "Parser Police:	122	13		
14		Where can we go from here?"		14		
15		Bates CSI-ANI-00031041 - 0032		15		
16				16		
17	Exhibit 332	Document headed "Hot ICE Product	129	17		
18		Requirements Document,"		18		
19		Bates CSI-CLI-00662062 - 2085		19		
20				20		
21	Exhibit 333	Document headed "Unprintable	132	21		
22		File,"		22		
23		first page Bates CSI-CLI-00358160		23		
24				24		
25				25		
			Page 6			Page 8
1	EXHIBITS			1	Palo Alto, California	09:21:40
2	NUMBER	DESCRIPTION	PAGE	2	Tuesday, February 23, 2016	
3	Exhibit 334	Document headed "User-based	149	3	10:09 a.m.	
4		Security Model (USM) for version 3		4		
5		of the Simple Network Management		5	PROCEEDINGS	09:21:40
6		Protocol (SNMPv3)," dated 1/1998		6	THE VIDEO OPERATOR: Good morning. We are	
7				7	on the record at 10:09 a.m. on February 23rd, 2016.	
8	Exhibit 335	Document headed "View-based	151	8	This is the videotaped deposition of Mr. Ramanathan	
9		Access Control Model (VACM) for		9	Kavasseri.	
10		the Simple Network Management		10	My name is Ramon Peraza, here with our	10:09:15
11		Protocol (SNMP)," dated 1/1998		11	court reporter, Carla Soares. We're here from	
12				12	Veritext Legal Solutions at the request of counsel	
13	Exhibit 336	Document headed "An Architecture	154	13	for the defendant.	
14		for Describing SNMP Management		14	This deposition is being held at Wilson	
15		Frameworks," dated 1/1998		15	Sonsini in Palo Alto. The caption of this case is	10:09:26
16				16	Cisco Systems, Inc., versus Arista Networks, Inc.,	
17	Exhibit 337	Document headed "Doc Number	159	17	Case No. 5:14-cv-05344-BLF (PSG).	
18		ENG-28473,"		18	Please note that audio- and	
19		Bates CSI-CLI-00609071 - 9083		19	video-recording will take place unless all parties	
20				20	have agreed to go off the record. Microphones are	10:09:50
21	Exhibit 338	Document entitled "Cisco IOS	172	21	sensitive and may pick up whispers or private	
22		Network Management Command		22	conversations.	
23		Reference," dated 10/2009,		23	At this time, Counsel, please identify	
24		Bates CSI-CLI-00319765 - 1101		24	yourselves for the record and state whom you	
25				25	represent.	10:10:00
			Page 7			Page 9

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1 Q Sure. 11:37:17	1 I don't recall the features that I was working on, so 11:40:26
2 The functional specifications that you	2 I don't recall specifically what I would have done
3 reviewed when developing SNMP features, would that	3 to compare.
4 specification have been written by someone at Cisco?	4 Q I see.
5 A Yes. 11:37:27	5 Was it part of your process in developing 11:40:35
6 Q And did you -- were you involved in	6 features to review what other vendors were doing to
7 writing any functional specifications?	7 implement the same features?
8 A Yes, I was.	8 A Other -- so in the space that we worked
9 Q Was that for the features that you were	9 with SNMP, vendors contributed to the IETF document
10 implementing? 11:37:36	10 so it wasn't as necessary to look at their 11:40:59
11 A Yes, it was. Yes, it was.	11 implementations because they were there telling us
12 Q Do you recall right now which functional	12 what they were trying to build. That was the whole
13 specifications you may have written?	13 point of building an industry standard.
14 A Not off the top of my head, no.	14 Also, Cisco was on the leading edge of
15 Q Did the GEM methodology involve reviewing 11:37:57	15 implementing the protocols as they were being 11:41:11
16 IETF documents?	16 developed. In a few cases, we would have the
17 A As far as I recall, no.	17 implementations before the protocols were released
18 Q Did you review IETF documents when you	18 because we were helping author the protocol.
19 were implementing SNMP features?	19 So at that point, looking at other vendors
20 A That is a broad question. If the feature 11:38:12	20 was not possible because they had not done the 11:41:24
21 had anything specific to do with an IETF document,	21 implementations or released the implementations,
22 then yes, I would have had to review the document to	22 which is why I was being very specific in saying, I
23 make sure I was implementing it correctly, "it"	23 don't recall the exact features I was working on.
24 being whatever I was working on,	24 But my answer would change depending on
25 Q Okay. And that is something -- you would 11:38:26	25 what I was working on and depending on whether 11:41:37
Page 62	Page 64
1 have reviewed an IETF document relating to a feature 11:38:31	1 somebody had done something in the field. 11:41:40
2 you were implementing before you implemented the	2 Q I understand.
3 feature; is that right?	3 Who else worked on the team that was
4 A If there was an IETF document associated	4 implementing SNMP features at Cisco?
5 with what I was working on and I was required to 11:38:41	5 A I don't remember all the names, but my 11:41:58
6 implement part or the whole part of that IETF	6 manager was John Hopprich. My technical lead and
7 document, then yes, I would have reviewed that IETF	7 mentor, Jeff -- Jeffrey Johnson. I had it for a
8 document before I implemented the feature.	8 moment and it went away there. Sandra Durham was
9 Q Were there features that you developed at	9 one of my peers.
10 Cisco relating to SNMP that were not defined by an 11:38:56	10 Anke Dosedal was also one of my team 11:42:34
11 IETF document?	11 members. Robert Stewart, who went by the moniker
12 A I don't have specifics, but I think that's	12 Bob, Bob Stewart, was also one of my peers.
13 a fair generalization, that there are parts of	13 Hold on. There's one more. Scott
14 our -- the Cisco SNMP implementation that were not	14 Mordock, M-O-R-D-O-C-K. Now, I can't recall if
15 described in any part of any IETF document because 11:39:32	15 Scott was on the team when I joined or joined later. 11:43:03
16 it was internal to how our product worked at the	16 He was I think at Cisco when I joined, but I'm not
17 time.	17 sure at what point he was part of the SNMP team or
18 Q So -- okay. When you were developing	18 not. Long time ago.
19 features related to SNMP at Cisco, did you also	19 So those are the names that come to mind.
20 review what other vendors were doing? 11:40:04	20 Q What was John Hopprich's role on the team? 11:43:23
21 MR. TUNG: Objection. Vague.	21 A He was my manager.
22 THE WITNESS: I do not recall.	22 Q And were the rest of the names, apart from
23 BY MR. SANTACANA:	23 John Hopprich and Jeff Johnson, were they also
24 Q You don't recall either way?	24 software engineers?
25 A I would like to change my answer to, I 11:40:23	25 A Yes. 11:43:36
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1 Q If you take a look at the last command in 14:41:36	1 at 2:44 p.m. 14:44:02
2 this table, "snmp-server user," do you know whether	2 (Recess, 2:44 p.m. - 3:05 p.m.)
3 you authored that command?	3 THE VIDEO OPERATOR: We are back on the
4 A Define what you mean by "authored that	4 record at 3:05 p.m.
5 command." 14:41:55	5 BY MR. SANTACANA: 15:05:39
6 Q Do you know whether you are the one who	6 Q Mr. Kavasseri, we left off talking about
7 came up with the sequence of words that resulted in	7 the "snmp-server user" command, and you testified
8 this command, "snmp-server user"?	8 that "snmp-server" came from a prior command in IOS
9 A I cannot be definitive about it.	9 at the time?
10 Q Who else do you recall working with on 14:42:07	10 A No, I said that I don't know how it came 15:05:56
11 this project that resulted in these eight commands?	11 about. It was already there when I joined Cisco.
12 A I would probably have reviewed this with	12 Q And its inclusion in this command for
13 my team members. And so I can't -- the reason I	13 which you are named the author, it's included there
14 answered the way I did is, I don't know if I came up	14 because it was already part of IOS?
15 with the word "user" or somebody else came up with 14:42:25	15 A It was a root part of the command to which 15:06:12
16 the word "user." So I'm not sure in hindsight.	16 I added extensions.
17 Q Did you come up with the term	17 Q And the root was in IOS before you started
18 "snmp-server"?	18 working at Cisco?
19 A Absolutely not.	19 A To the best of my knowledge, it was
20 Q Okay. How do you know that? 14:42:39	20 already there before I started. 15:06:23
21 A It was there before I joined.	21 Q And the term "user" is a term that comes
22 Q It was where?	22 from the SNMP industry standard?
23 A It was in the IOS CLI before I joined	23 A I'm not sure I'd say it exactly that way.
24 Cisco.	24 The term "user" relates to parts of the SNMP V3
25 Q Okay. And so the addition to that term 14:42:48	25 protocol, yes. 15:06:48
Page 146	Page 148
1 that was new was the word "user"? 14:42:52	1 Q Is that a term that the protocol uses? 15:06:49
2 A Yes.	2 A I believe so, but I -- if you have a copy
3 Q Okay. And do you know where that word	3 of the reference, I could take a look.
4 came from?	4 Q Sure. Of course.
5 A The SNMP V3 protocol specification has a 14:43:00	5 THE VIDEO OPERATOR: Exhibit 334. 15:07:03
6 definition of roles, if I remember right, and users	6 (Exhibit 334 was marked for identification
7 and groups are in the protocol.	7 and is attached hereto.)
8 Q So the term "user" came from the	8 BY MR. SANTACANA:
9 protocol -- came from the industry standard	9 Q Exhibit 334 is RFC 2274 titled "User-based
10 protocol? 14:43:21	10 Security Model (USM) for version 3 of the Simple 15:07:17
11 A Yes.	11 Network Management Protocol (SNMP V3)."
12 MR. TUNG: Objection. Mischaracterizes.	12 Do you know, sir, if this is an RFC that
13 THE WITNESS: It referred to what was in	13 you reviewed when you were --
14 the protocol, yes.	14 A Yes. Let me -- I'm pretty sure this was
15 BY MR. SANTACANA: 14:43:29	15 an RFC I reviewed because I ended up implementing 15:07:39
16 Q And the protocol uses the word "user"?	16 parts of it.
17 A I've got to go read the protocol to be	17 Q And just to be clear, it's an RFC that you
18 absolutely sure.	18 reviewed when you were implementing the eight
19 Q Okay.	19 commands in Exhibit 329?
20 A After this, can we take a break? 14:43:51	20 A Seven. I'm not sure about "snmp host." 15:07:53
21 Q Of course.	21 Q Okay. So this is something you would have
22 If you want, we can take a break right	22 reviewed before you proposed those command names?
23 now.	23 A Yes, that's correct.
24 A Fantastic.	24 Q And does this document use the term "user"
25 THE VIDEO OPERATOR: We are off the record 14:44:01	25 in the same way that the "snmp-server user" command 15:08:13
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1 uses it? 15:08:17	1 Q Is this a document you reviewed when you 15:12:26
2 A I would have to read it. Give me a minute	2 were preparing to implement the commands in
3 to --	3 Exhibit 329?
4 Can you rephrase or repeat the question,	4 A I believe it would have been something I
5 please? 15:09:11	5 reviewed before I implemented the commands. 15:12:35
6 Q This RFC 2274, does this document use the	6 Q And if you flip to page 3 of the document,
7 term "user" the same way that you used the term	7 under Section 2.1 titled "Groups," the first
8 "user" in "snmp-server user"?	8 paragraph defines the term "group" as follows: "A
9 A The document does not define a CLI command	9 group is a set of zero or more securityModel,
10 or -- so I will -- the term "user" seems to refer to 15:09:39	10 securityName tuples on whose behalf SNMP management 15:12:55
11 the same entity in both cases. But the document	11 objects can be accessed. A group defines the access
12 does not tell me there needs to be a command called	12 rights afforded to all securityNames which belong to
13 "snmp-server user."	13 that group."
14 Q I understand.	14 Does this RFC use the term "group" the
15 A Okay. 15:10:09	15 same way that you were using it in your "snmp-server 15:13:08
16 Q So you did not come up with the term	16 group" command?
17 "user"?	17 A I believe so.
18 A In which context?	18 Q What does the "snmp-server group" command
19 Q In the context of this "snmp-server user"	19 do?
20 command. 15:10:32	20 A Actually, even reading this document 15:13:26
21 A As I responded earlier, I'm not sure how	21 probably won't tell me because I need to see all the
22 the term "user" came about, whether it was due to a	22 help extensions to see what it does.
23 group interaction or something I did or something	23 Q Okay.
24 somebody else did.	24 A So it's been a while.
25 Q Okay. I'd like to direct your attention 15:10:50	25 Q You don't recall what it does? 15:13:34
Page 150	Page 152
1 now to "snmp-server group," which is the next row 15:10:53	1 A No. 15:13:35
2 up.	2 Q Okay. Do you recall what "snmp-server
3 A Yeah.	3 user" does?
4 Q As you've testified, "snmp-server" was a	4 A I would rather not guess at this point.
5 term that was a root already present in IOS at this 15:11:03	5 It's been years since I used these commands. 15:13:45
6 time; is that correct?	6 I probably would be able to figure it out
7 A Yes.	7 within about 25 minutes of touching the CLI, but
8 Q The term "group," did that come from IOS	8 it's really old, old stuff.
9 as well or did it come from somewhere else?	9 Q I understand.
10 A I believe there was a concept of "group" 15:11:20	10 I'd like to turn your attention now to the 15:14:14
11 in this document. Let me look through it one more	11 two commands right above that, "snmp-server engineID
12 time.	12 local" and "snmp-server engineID remote."
13 Q I think you'll have more luck with this	13 Did you author those commands?
14 one.	14 A I think I have a strong recollection that
15 A Yeah, there may be a separate document for 15:11:48	15 I had more to do with these commands; in part, the 15:14:32
16 that.	16 fact that there was the ID which is upper case,
17 (Exhibit 335 was marked for identification	17 which is usually not what we do in these IOS CLI
18 and is attached hereto.)	18 commands. It stands out.
19 BY MR. SANTACANA:	19 Q Typically in IOS CLI you weren't
20 Q Exhibit 335 is RFC 2275 entitled 15:12:02	20 accustomed to seeing letters capitalized like they 15:14:52
21 "View-based Access Control Models (VACM) for the	21 are in the term "engineID"?
22 Simple Network Management Protocol (SNMP)." It's	22 A Yes.
23 dated January 1998.	23 Q Why were they capitalized here?
24 Do you recognize this document, sir?	24 A I have no idea why I capitalized them.
25 A Yes, I do. 15:12:25	25 Q Okay. 15:15:07
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1 rest of the configuration through SNMP directly. 15:31:32	1 team suggested, "Hey, go with the shortest string." 15:34:39
2 This was not possible before.	2 Because when you're talking about the
3 Because it was not possible before, we had	3 command line, it's all about how many characters you
4 never bothered with creating communities which	4 type, or it's a lot to do with how many characters
5 existed before SNMP V3 through SNMP. So now we 15:31:46	5 you type. 15:34:51
6 needed to add that as a support feature as well.	6 Q Why is that?
7 BY MR. SANTACANA:	7 A Well, you could type U and hit "tab," and
8 Q And the reason you needed to add the	8 if there was no other word that started with U, IOS
9 ability to create and delete communities, users and	9 would auto-complete to "user." So you didn't need
10 groups was because of the features of the industry 15:31:59	10 to type the whole thing. 15:35:03
11 standard SNMP V3?	11 Q Okay. If you turn to the page that ends
12 A I don't know whether SNMP V3 -- the	12 in 82, this is the end of a list of CLI commands
13 SNMP V3 talked about users, not communities, if I	13 that you're proposing, and this one in particular is
14 remember right. I think that's what we referred to	14 the "snmp-server engineID" command.
15 in the -- in getting -- things getting tricky. 15:32:24	15 Do you see that? 15:35:28
16 Even now we just had it through SNMP, so	16 A Can you repeat that again, please?
17 only the IOS CLI was the point of record. I'm not	17 Just -- I'm slowing down reading stuff already.
18 sure whether I meant here that you could delete	18 Q Of course. After the first paragraph
19 stuff through SNMP that was created through the CLI	19 here, which carries over from the previous page,
20 and now the CLI needs to be regenerated or resaved 15:32:38	20 there's an asterisk, and then there's the 15:35:40
21 to NV RAM.	21 "snmp-server engineID" command.
22 Q Okay. I think I understand. And it might	22 A Yeah.
23 be clear if you flip to the page that ends in 75.	23 Q And then below that you describe what the
24 Section 2.7.	24 command is and what it's going to do.
25 Section 2.7 says, "SNMP V1/V2 versus SNMP 15:33:02	25 Do you see that? 15:35:49
Page 162	Page 164
1 V3 -- differences, and how things work." 15:33:07	1 A Yeah. 15:35:51
2 And then you have a list of differences	2 Q And then also it shows that local and
3 and how things work between the old and the new	3 remote are optional arguments.
4 versions of SNMP.	4 Do you see that?
5 The first thing that you wrote was, "In 15:33:18	5 A Where does it say local and remote are 15:36:03
6 SNMP V3, 'community strings' are called 'users,'"	6 optional arguments?
7 and "users" is in quotation marks. "Each 'user,'"	7 Q Directly under "snmp-server engineID," do
8 in quotation marks again, "has an access-policy,	8 you see the open bracket, and then it says, "local,"
9 which is termed a 'group,'" and the word "group" is	9 and then there's a vertical line, and then it says,
10 also in quotation marks, "i.e., users belong to a 15:33:31	10 "remote"? 15:36:13
11 group."	11 A So --
12 A Yep.	12 Q So it indicates that the command
13 Q Does this -- strike that.	13 "snmp-server engineID" could either take the local
14 Does this refresh your recollection as to	14 argument or the -- parameter, if you will, or the
15 whether the terms "users" and "group" came from the 15:33:49	15 remote. 15:36:27
16 SNMP standard?	16 A No, I don't think that this is an optional
17 A The term "user" and "group" referred to	17 argument. I think there's a typo in this text here.
18 concepts in the SNMP standard. Of that, I have no	18 Q Okay.
19 issue with saying that.	19 A Because if you look at it, the first
20 The reason I hesitate is, we use the term 15:34:19	20 bracket is an open curly brace. There is no close 15:36:34
21 "user," and we could have used VACM user or any	21 curly brace.
22 other combination of "user."	22 I assume that -- and again, I could be
23 We settled on "user." I'm not sure that	23 completely wrong on this. I assume that the -- if
24 that was because it was directly due to looking at	24 you look at "remote ipaddress udp-port," and then
25 the RFC, or somebody in parser police or within my 15:34:35	25 within angle brackets, "port," following that are 15:36:52
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1 standard protocol while you were working at Cisco? 15:42:40	1 Q I understand. 15:45:53
2 A I was not in the room for discussions	2 You've expressed some additional haziness
3 to -- let me rephrase by saying I had very limited	3 about the command "show snmp host."
4 interactions at the time this document was written.	4 A Yes.
5 I know that Jeffrey Johnson was very 15:43:08	5 Q I'm going to apologize in advance for the 15:46:21
6 involved because he was my mentor, and he would tell	6 heft of this thing.
7 me that he was working on the RFC draft. I have no	7 A Holy cow.
8 direct evidence of the other two that I can recall.	8 (Exhibit 338 was marked for identification
9 I will add an addendum that they both were	9 and is attached hereto.)
10 very respected people, and I'm very sure they did a 15:43:32	10 BY MR. SANTACANA: 15:46:31
11 lot for these documents. I just don't have any	11 Q Exhibit 338 is titled "Cisco IOS Network
12 direct evidence that I was privy to from a working	12 Management Command Reference." It bears control
13 meeting or anything else.	13 numbers beginning with CSI-CLI-00319765, and it's
14 Q Okay. So you can set that aside now.	14 dated October 2009.
15 Looking back at Exhibit 329, we'd started 15:43:57	15 I just want you to flip to the page that 15:47:03
16 discussing the four "show" commands, "show snmp"	16 ends in 1060. The internal page would be NM-1248.
17 commands.	17 So this page relates to the command
18 "Show" was a term that was already in	18 "snmp-server host."
19 IOS CLI; is that fair to say?	19 A Yes.
20 A When I joined Cisco -- I've actually never 15:44:11	20 Q Do you recognize that command? 15:47:58
21 asked the question when "show" was in the command.	21 A Yes, now I do.
22 As far as I can tell, it was there when I joined.	22 Q Did you author that command?
23 Q And the reason that you used it here was	23 A I will go back to my earlier statement
24 because it was already used in other IOS CLI	24 that it's highly likely that I checked in the file
25 commands? 15:44:37	25 with this command. Especially with this command, I 15:48:21
Page 170	Page 172
1 A By the time I implemented these commands, 15:44:38	1 am not sure whether I was the original author of the 15:48:24
2 "show" was the standard way to display information	2 term "host."
3 from the CLI.	3 I'm going to say "term" instead of
4 Q And the term "SNMP," of course, as we've	4 "command," which you used, because we're talking
5 discussed, is an industry standard protocol; is that 15:44:49	5 about an extension to the SNMP server command here. 15:48:32
6 fair to say?	6 The reason I say "host" is, if I remember
7 A In which context? The term "SNMP" by	7 right, the previous version, now that I'm reading
8 itself as an acronym is industry standard protocol,	8 this, we are specifying the target of an event that
9 yes.	9 is being messaged through SNMP.
10 Q And then so the first two words in each of 15:45:07	10 Previously this event was called a trap. 15:48:58
11 these commands is "show snmp." And then we have	11 Now we're giving you the option of a trap or an
12 "show snmp user" and "show snmp group."	12 inform.
13 A Yeah.	13 So there was some effort to differentiate
14 Q And the terms "user" and "group" also are	14 between what was before and what is now the
15 terms that are used in the IETF SNMP documents; is 15:45:21	15 acceptable -- accepted way of configuring targets. 15:49:20
16 that fair to say?	16 Q If you look at the page NM-1251, control
17 A "User" and "group" appear in the -- "snmp	17 number ends in 1063, this is a command history for
18 user" and "group" appear in the IETF documents.	18 the command "snmp-server host," and it lists as the
19 Q And the way that they're used here is the	19 first release IOS version 10.
20 same way that they're used in those IETF documents? 15:45:35	20 Do you see that? 15:50:04
21 A To the best of my knowledge, they refer to	21 A "Host"? I thought that that previous
22 the same things. But they're not used in the same	22 version was "enable trap." Let me double-check.
23 way in that the IETF document does not refer to a	23 Yeah, this differs from my recollection.
24 CLI command. In here they're used specifically for	24 Q Sorry?
25 CLI commands. 15:45:52	25 A This differs from my recollection. 15:50:29
Page 171	Page 173

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p>1 2 3 4 5 6 7 8 I, RAMANATHAN KAVASSERI, do hereby declare 9 under penalty of perjury that I have read the 10 foregoing transcript; that I have made any 11 corrections as appear noted, in ink, initialed by 12 me, or attached hereto; that my testimony as 13 contained herein, as corrected, is true and correct. 14 EXECUTED this _____ day of _____, 15 2016, at _____, 16 (City) (State) 17 18 19 20 RAMANATHAN KAVASSERI 21 22 23 24 25</p> <p style="text-align: right;">Page 194</p>	
<p>1 I, the undersigned, a Certified Shorthand 2 Reporter of the State of California, do hereby 3 certify: 4 That the foregoing proceedings were taken 5 before me at the time and place herein set forth; 6 that any witnesses in the foregoing proceedings, 7 prior to testifying, were administered an oath; that 8 a record of the proceedings was made by me using 9 machine shorthand which was thereafter transcribed 10 under my direction; that the foregoing transcript is 11 a true record of the testimony given. 12 Further, that if the foregoing pertains to 13 the original transcript of a deposition in a Federal 14 Case, before completion of the proceedings, review 15 of the transcript [X] was [] was not requested. 16 I further certify I am neither financially 17 interested in the action nor a relative or employee 18 of any attorney or any party to this action. 19 IN WITNESS WHEREOF, I have this date 20 subscribed my name. 21 22 Dated: 3/7/16 23 24 <i>Carla Soares</i> 25 CARLA SOAKES CSR No. 5908</p> <p style="text-align: right;">Page 195</p>	

CONFIDENTIAL INFORMATION UNDER THE PROTECTIVE ORDER

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS,)
INC.,)
Plaintiff,)
vs.) No. 5:14-cv-05344-BLF (PSG)
ARISTA NETWORKS,)
INC.,)
Defendant.)

CONFIDENTIAL INFORMATION UNDER THE PROTECTIVE ORDER

VIDEOTAPED DEPOSITION OF ANTHONY J. LI

Palo Alto, CA

Monday, February 1, 2016

Volume I

Reported by: SUSAN F. MAGEE, RPR, CCRR, CLR

CSR No. 11661

JOB No. 2224600

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5	CISCO SYSTEMS,)	5	Volume I
6	INC.,)	6	EXAMINATION BY PAGE
7	Plaintiff,)	7	BY MR. WONG 9
8	vs.) No. 5:14-cv-05344-BIF (PSG)	8	BY MR PAK 191
9	ARISTA NETWORKS,)	9	
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15	CONFIDENTIAL INFORMATION UNDER THE	15	
16	PROTECTIVE ORDER VIDEO DEPOSITION OF ANTHONY J. LI	16	
17	taken on behalf of Defendant at WILSON, SONSINI,	17	
18	GOODRICH & ROSATI, 601 South California Avenue,	18	
19	Palo Alto, CA 94304, beginning at 9:13 a.m. and	19	
20	ending at 4:17 p.m. on Monday, February 1, 2016,	20	
21	before Susan F. Magee, RPR, CCRR, CLR, Certified	21	
22	Shorthand Reporter No. 11661.	22	
23		23	
24		24	
25		25	
Page 2		Page 4	
1	APPEARANCES:	1	E X H I B I T S
2		2	NUMBER DESCRIPTION PAGE
3	For the Plaintiff:	3	
4	QUINN, EMANUEL, URQUHART & SULLIVAN	4	Exhibit 136 LinkedIn Profile (8 pages) 12
5	BY: SEAN PAK, ESQ.	5	Exhibit 137 RFC Table (3 pages) 90
6	50 California Street	6	Exhibit 138 March 1995 RFC 1771, A Border 100
7	22nd Floor	7	Gateway Protocol 4 (BGP-4) (57
8	San Francisco, CA 94111	8	pages)
9	(415) 875-6600	9	Exhibit 139 December 1995 RFC 1887, An 105
10	seanpak@quinnemanuel.com	10	Architecture for IPv6 Unicast
11		11	Address Allocation,
12	For the Defendant:	12	ARISTANDCA00025747-ARISTANDCA
13	KEKER & VAN NEST LLP	13	00025772
14	BY: RYAN WONG, ESQ.	14	Exhibit 140 June 1996 RFC 1966, BGP Route 111
15	BRIAN L. FERRALL, ESQ.	15	Reflection, An Alternative to
16	633 Battery Street	16	Full Mesh IBGP,
17	San Francisco, CA 94111-1809	17	ARISTANDCA00025927-ARISTANDCA
18	(415) 773-6682	18	00025933
19	rwong@kvn.com	19	Exhibit 141 October 2008 RFC 2966, 116
20	bferrall@kvn.com	20	Domain-Wide Prefix Distribution
21		21	with Two-Level IS-IS (16 pages)
22	The Videographer:	22	Exhibit 142 August 1996 RFC 1997, BGP 119
23	JEFREE ANDERSON	23	Communities Attribute,
24		24	ARISTANDCA00026094-ARISTANDCA
25		25	00026098
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1	E X H I B I T S (continued)		1	Palo Alto, CA, Monday February 1, 2016	
2	NUMBER DESCRIPTION PAGE		2	9:13 a.m.	
3			3		
4	Exhibit 143 March 1998 RFC 2281, Cisco Hot Standby Router Protocol (HSRP),	124	4	THE VIDEOGRAPHER: Good morning. We're on	
5	ARISTANDCA00026832-ARISTANDCA		5	the record at 9:13 a.m. on February 1st, 2016. This	09:13:47
6	00026848		6	is the video recorded deposition of -- so sorry. Of	
7			7	Anthony Li here with our court reporter Susan Magee.	
8	Exhibit 144 E-mail String Containing	143	8	My name is Jefree Anderson. We are here	
9	9/22/92 E-mail from/to Toni Li,		9	from Veritext Legal Solutions at the request of	
10	TS-00000066		10	counsel for the -- defendant or the plaintiff?	09:14:16
11	Exhibit 145 Procket Networks PRO/8000	163	11	MR. WONG: Defendants.	
12	Series Software Introduction		12	THE VIDEOGRAPHER: For the defendant. This	
13	(144 pages)		13	deposition is being held at Wilson Sonsini at	
14	Exhibit 146 Procket Networks PRO/8000	164	14	601 California Avenue, Palo Alto, California. The	
15	Series IPv6 Routing Protocols		15	caption of this case is Cisco Systems, Incorporated	09:14:31
16	(180 pages)		16	vs. Arista Networks, Incorporated. The case number	
17	Exhibit 147 Procket Networks PRO/8000	164	17	is 5:14-cv-05344.	
18	Series System Management and		18	Please note that audio and video recording	
19	Operations (604 pages)		19	will take place unless all parties agree to go off	
20	Exhibit 148 Cisco's 6th Supplemental	167	20	the record, and microphones are sensitive and may	09:14:53
21	Response to Interrogatory NO.		21	pick up whispers, private conversations and cellular	
22	16 and Response to		22	interference; so please be aware of that.	
23	Interrogatory No. 19 Amended		23	Beginning with our noticing attorney,	
24	Exhibit F (45 pages)		24	please state your name and the firm you represent.	
25	Exhibit 149 List of Commands (1 page)	169	25	MR. WONG: Ryan Wong from Keker & Van Nest	09:15:05
		Page 6			Page 8
1	E X H I B I T S (continued)		1	for defendant Arista Networks.	
2	NUMBER DESCRIPTION PAGE		2	MR. FERRALL: Brian Ferrall, Keker & Van	
3			3	Nest, also for Arista.	
4	Exhibit 150 1/20/96 E-mail from Toni Li to	183	4	MR. PAK: Sean Pak of Quinn for Cisco.	
5	Bill W., CSI-CLI-00746246		5	THE VIDEOGRAPHER: Thank you.	09:15:16
6	Exhibit 151 CSCdi14533, CSI-CLI-01339850	185	6	Will the court reporter please swear in the	
7	Exhibit 152 Group of E-mails Containing	239	7	witness.	
8	2/23/1996 E-mail from Tony Li		8		
9	to widmer@cisco.com,		9	ANTHONY J. LI,	
10	CSI-CLI-00746331 -		10	having been administered an oath, was examined and	09:15:19
11	CSI-CLI-00746347		11	testified as follows:	
12			12		
13			13	EXAMINATION BY MR. WONG	
14			14		
15			15	Q. Good morning, Mr. Li.	09:15:29
16			16	A. Good morning.	
17			17	Q. Please state your full name.	
18			18	A. Anthony Joseph Li.	
19			19	Q. Do you live in the Bay Area, Mr. Li?	
20			20	A. I do.	09:15:36
21			21	Q. Please state your home address.	
22			22	A. 1218 Thurston Avenue, Los Altos, California	
23			23	94024.	
24			24	Q. Mr. Li, do you understand that are you	
25			25	testifying here in response to a subpoena in this	09:15:46
		Page 7			Page 9

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<p>1 DEC systems, also had several IBM systems. VMCMS is 2 an operating system for IBM mainframes, and USC had 3 one and I had an account on the VM system. 4 Q. And what was the command syntax like for 5 the CLI on VMCMS? 09:45:55 6 A. I'm sorry. I don't remember. 7 Q. You mentioned RSX-11M? 8 A. It's 11M. 9 Q. 11M. Sorry. 10 A. This was an operating system for PDP-11s. 09:46:06 11 Q. What are PDP-11s? 12 A. That was a computer built by 13 Digital Equipment Corporation. 14 Q. Do you recall the command syntax of the 15 command line interface used on the RSX-11M? 09:46:25 16 A. No, I'm sorry. I don't. 17 Q. You mentioned that the LinkedIn profile 18 that we marked as Exhibit 136 did not have your full 19 work history? 20 A. Correct. 09:46:46 21 Q. What work history is missing from your 22 LinkedIn profile? 23 A. In particular the sys admin positions that 24 I mentioned, summer internships predating. There 25 were several of those. Full-time positions that are 09:46:59</p> <p style="text-align: right;">Page 30</p>	<p>1 projects throughout the router. I started off doing 2 mostly maintenance work and answering customer 3 questions. I then had several development projects. 4 My first development project was implementing 5 something called TCP header compression. 09:48:41 6 Q. And after you worked on TCP header 7 compression, what else did you work on while at 8 Cisco? 9 A. I had numerous routing -- small projects 10 within routing extending various interfaces and 09:48:58 11 extending protocols as necessary. 12 My next big project was actually working on 13 BGP, Border Gateway Protocol. 14 BY MR. WONG: Q. You mentioned TCP header 15 expression. What does TCP mean? 09:49:22 16 A. That's Transmission Control Protocol. It's 17 part of the Internet Protocol suite. 18 Q. Is TCP an industry standard? 19 A. It is. 20 Q. Was it an industry standard at the time you 09:49:37 21 worked on it at Cisco? 22 A. It was. 23 Q. What standard-setting body produced the TCP 24 standard? 25 A. That's a difficult question. The TCP 09:49:49</p> <p style="text-align: right;">Page 32</p>
<p>1 not relevant to my professional experience, 2 particularly while I was in high school. 3 Q. Sure. After you graduated from USC, what 4 did you do then? 5 A. So I -- next fall I went to Rutgers and 09:47:20 6 spent a year there, hated it and immediately 7 transferred to USC. 8 Q. Oh, I'm sorry. My question was after you 9 graduated from USC, what did you do after that? 10 A. After USC? So I graduated in September 09:47:38 11 of 1990. I worked on a postdoc at USC with 12 Deborah Estrin and then took a position at 13 Cisco Systems. 14 Q. Do you know when you started at 15 Cisco Systems? 09:47:53 16 A. January 14th, 1991. 17 Q. Why did you join Cisco after graduating 18 from USC? 19 A. Lack of a better job. 20 Q. Did you apply elsewhere besides Cisco? 09:48:02 21 A. I did. 22 Q. And describe for me the projects that you 23 worked on while you worked at Cisco starting in 24 1991. 25 A. I worked on a wide, wide variety of 09:48:22</p> <p style="text-align: right;">Page 31</p>	<p>1 standard was really a product of -- I guess the 2 ARPANET project, but this actually predates IETF 3 being accepted as a standards-making body, which is 4 a whole book in itself. Great deal of politics 5 behind that. So it was a de facto standard 09:50:16 6 effectively. 7 Q. What do you mean by "de facto standard"? 8 A. Which meant that the industry used it and 9 it was publicly available, everyone was free to 10 adopt it, and yet it did not have the backing of a 09:50:36 11 formal standards body such as the IEEE. 12 MR. PAK: I'll object to this line of 13 questioning as calling for expert testimony. 14 BY MR. WONG: Q. Now, you said that the 15 TCP standard was really a product of ARPANET; 09:51:10 16 correct? 17 A. Correct. 18 Q. What is ARPANET? 19 A. ARPANET was a project from the Defense 20 Department's Advanced Research Projects Agency to 09:51:18 21 build a network for computers that was highly robust 22 and relayed data between computers efficiently. 23 Q. How do you know that, Mr. Li? 24 A. Having worked on it for many, many years 25 and been involved with it as soon as it became 09:51:34</p> <p style="text-align: right;">Page 33</p>

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<p>1 with during this 1991 through 1996 time period at 2 Cisco? 3 A. Everything else in the IP protocol suite 4 within Cisco. This includes RIP, IGRP, EIGRP, EGP, 5 OSPF, IS-IS. I also had my hands in some of the 10:03:14 6 CLNS stack. 7 Q. What is OSPF? 8 A. Open Shortest Path First routing protocol 9 from the IETF. 10 THE REPORTER: Would you mind repeating 10:03:43 11 that. I'm sorry. 12 THE WITNESS: Open Shortest Path First 13 routing protocol from the IETF. 14 THE REPORTER: Thank you. 15 BY MR. WONG: Q. And the RIP and the IGRP 10:03:51 16 you just mentioned, those are the same RIP and IGRP 17 you were discussing earlier today; correct? 18 A. Yes. 19 Q. You mentioned IS-IS. 20 What is IS-IS? 10:04:00 21 A. This is another routing protocol that comes 22 from the ISO protocol stack and the OSI standards 23 body. It supports routing for both CLNP and IP. 24 Q. What is CLNP? 25 A. Connectionless Network Protocol. 10:04:25 Page 42</p>	<p>1 A. The standard -- the standard for IS-IS. 2 MR. PAK: Ryan, when you get a chance, can 3 we take a break? We've been going for about an 4 hour. 5 MR. WONG: Sure. We can take a break now. 10:05:45 6 THE WITNESS: Thank you. 7 THE VIDEOGRAPHER: Going off the record. 8 The time is 10:05. 9 (Recess taken from 10:05 a.m. to 10 10:11 a.m.) 10:11:25 11 THE VIDEOGRAPHER: We're back on the 12 record. The time is 10:11. 13 BY MR. WONG: Q. Mr. Li, you used the 14 acronym BGP to refer to the Border Gateway Protocol; 15 correct? 10:11:46 16 A. Correct. 17 Q. Is BGP a commonly known acronym for Border 18 Gateway Protocol? 19 A. No, not common. 20 Q. Okay. Is it a -- strike that. 10:11:54 21 Why do you use the term "BGP" to refer to 22 the Border Gateway Protocol? 23 A. So that's the acronym that is used within 24 the industry. 25 Q. When you say that's the acronym that's used 10:12:10 Page 44</p>
<p>1 Q. And is that protocol also an industry 2 standard? 3 A. It is. 4 Q. What is the standard-setting body that 5 manages CLNP? 10:04:37 6 A. ISO. 7 Q. What is ISO? 8 A. International Standards Organization. 9 Although that's more formally it's -- the official 10 name is in French, so . . . 10:04:53 11 Q. When you were talking about IS-IS, you 12 mentioned the OSI standards body. 13 Do you remember that? 14 A. That's correct. 15 Q. What is the OSI standards body? 10:05:04 16 A. Open systems -- I don't remember the full 17 expansion. Sorry. 18 Q. Okay. So who was the standard-setting body 19 for IS-IS? 20 A. I believe that was -- falls under ISO which 10:05:20 21 is the child of OSI. 22 Q. And how do you know that, Mr. Li? 23 A. I've read the document. 24 Q. When you say "the document," do you mean 25 the -- 10:05:34 Page 43</p>	<p>1 within the industry, you're referring to the BGP 2 acronym; correct? 3 A. Correct. 4 Q. And when you say "the industry," what do 5 you mean by "the industry"? 10:12:21 6 A. Computer network. 7 Q. And how long as BGP been used as an acronym 8 within the computer networking industry, to your 9 knowledge? 10 A. Since BGP was first introduced, which I 10:12:42 11 believe was approximately 1989. 12 Q. Okay. And why do you use the term "RIP" or 13 R-I-P to refer to Router Information Protocol? 14 A. That is the common acronym used for that 15 protocol. 10:13:21 16 Q. In the networking industry? 17 A. In the networking industry. 18 Q. And how long has RIP been a commonly used 19 acronym in the networking industry? 20 A. I don't know. 10:13:30 21 MR. PAK: Objection. Calls for expert 22 testimony. 23 BY MR. WONG: Q. Okay. But to your 24 knowledge, it is a commonly used acronym in the 25 networking industry today? 10:13:39 Page 45</p>

CONFIDENTIAL INFORMATION UNDER THE PROTECTIVE ORDER

<p>1 A. It is.</p> <p>2 Q. Do you know when you first started using</p> <p>3 the acronym RIP?</p> <p>4 A. 1991 when I came to Cisco.</p> <p>5 Q. And did you come up with the acronym RIP? 10:13:48</p> <p>6 A. No, I did not.</p> <p>7 Q. Where did you get that acronym from?</p> <p>8 A. I heard it from coworkers first.</p> <p>9 Q. And you did not come with the acronym BGP;</p> <p>10 correct? 10:14:07</p> <p>11 A. Correct.</p> <p>12 Q. Where did you first hear the acronym BGP?</p> <p>13 A. From discussions on a Usenet mailing list.</p> <p>14 Q. What is a Usenet mailing list?</p> <p>15 A. Usenet was a system for exchanging 10:14:23</p> <p>16 messaging in a broadcast fashion, and there were</p> <p>17 groups within that where people would circulate</p> <p>18 messages. And so there was a discussion of routing</p> <p>19 protocols, and I heard about it first through that.</p> <p>20 Q. And what time period are you talking about 10:14:45</p> <p>21 here when you first heard the acronym BGP?</p> <p>22 A. This would be somewhere between about 1985</p> <p>23 to 1990.</p> <p>24 Q. So that was before you started working at</p> <p>25 Cisco; correct? 10:15:01</p> <p style="text-align: right;">Page 46</p>	<p>1 working for Cisco in 1991?</p> <p>2 A. Approximately three.</p> <p>3 Q. What was your familiarity with the command</p> <p>4 line interface on Cisco's routers before you started</p> <p>5 working at Cisco in 1991? 10:16:30</p> <p>6 A. So I used Cisco's CLI for those three years</p> <p>7 between '87 and 1991.</p> <p>8 Q. What level of familiarity -- strike that.</p> <p>9 Was OSPF a well-known acronym in the</p> <p>10 networking industry? Actually, strike that. 10:17:02</p> <p>11 Is OSPF a well-known acronym in the</p> <p>12 networking industry?</p> <p>13 A. Yes, it is very well-known.</p> <p>14 Q. And when did you first hear of the acronym</p> <p>15 OSPF, Mr. Li? 10:17:12</p> <p>16 A. As part of my employment at Cisco.</p> <p>17 Q. Approximately when did you hear -- first</p> <p>18 hear of OSPF?</p> <p>19 A. About 1992.</p> <p>20 Q. Approximately how long has "OSPF" been a 10:17:23</p> <p>21 well-known term in the networking industry, to your</p> <p>22 knowledge?</p> <p>23 MR. PAK: Objection. Calls for expert</p> <p>24 testimony.</p> <p>25 THE WITNESS: I suspect at least 1989. 10:17:32</p> <p style="text-align: right;">Page 48</p>
<p>1 A. Correct.</p> <p>2 Q. Is "IGRP" also a commonly used term in the</p> <p>3 networking industry?</p> <p>4 A. It is.</p> <p>5 Q. And how long, to your knowledge, has "IGRP" 10:15:17</p> <p>6 been a commonly used term in the networking</p> <p>7 industry?</p> <p>8 MR. PAK: Objection. Calls for expert</p> <p>9 testimony.</p> <p>10 THE WITNESS: I recall seeing it very early 10:15:24</p> <p>11 on. I first learned about it in 1987.</p> <p>12 BY MR. WONG: Q. And you did not come up</p> <p>13 with the acronym IGRP; right?</p> <p>14 A. No, I did not.</p> <p>15 Q. Do you recall how you first learned about 10:15:38</p> <p>16 the acronym IGRP?</p> <p>17 A. So I was asked to administer a Cisco router</p> <p>18 in 1987 and was -- did Cisco training and learned</p> <p>19 about IGRP through that training.</p> <p>20 Q. And that was before you joined Cisco in 10:15:58</p> <p>21 1991; right?</p> <p>22 A. That's correct. I was a customer before an</p> <p>23 employee.</p> <p>24 Q. How many years of experience did you have</p> <p>25 working with Cisco routers before you started 10:16:15</p> <p style="text-align: right;">Page 47</p>	<p>1 BY MR. WONG: Q. Why do you say that,</p> <p>2 Mr. Li?</p> <p>3 A. So there's work started on OSPF early on</p> <p>4 prior to my joining Cisco and prior to my learning</p> <p>5 about it, and I believe that was about '89. 10:17:44</p> <p>6 Q. When you say there was work started on</p> <p>7 OSPF, what are you referring to by that?</p> <p>8 A. This is work in the IETF to specify the</p> <p>9 protocol.</p> <p>10 Q. And how did you know that there was work 10:18:02</p> <p>11 started on OSPF by the IETF around 1989?</p> <p>12 A. So there was a discussion list about it,</p> <p>13 and I looked at some the history of OSPF and looked</p> <p>14 at the RFC that subsequently came out. I knew that</p> <p>15 folks had been working on it for quite some time. 10:18:33</p> <p>16 Q. Who was participating in the discussion</p> <p>17 list about OSPF at that 1989 time period?</p> <p>18 A. I --</p> <p>19 MR. PAK: Objection. Calls for</p> <p>20 speculation. 10:18:48</p> <p>21 THE WITNESS: So John Moy, Milo Medin,</p> <p>22 Vince Fuller, Cathy Wittbrodt. Don't remember the</p> <p>23 rest.</p> <p>24 BY MR. WONG: Q. And how do you know those</p> <p>25 individuals you just named were part of the 10:19:12</p> <p style="text-align: right;">Page 49</p>

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<p>1 discussion of OSPF in 1989?</p> <p>2 A. I subsequently worked with them as part of</p> <p>3 IETF and learned of their involvement with OSPF.</p> <p>4 Q. You worked -- strike that.</p> <p>5 When did you work with those individuals as 10:19:31</p> <p>6 part of the IETF?</p> <p>7 A. I started working with them in 1991.</p> <p>8 Q. What companies, if you recall, did those</p> <p>9 individuals work for?</p> <p>10 A. John Moy represented Proteon. Milo Medin 10:19:50</p> <p>11 worked for NASA. Cathy Wittbrodt was at</p> <p>12 Energy Sciences Network at -- as part of</p> <p>13 Lawrence Livermore Labs.</p> <p>14 Q. Did any other vendors -- strike that.</p> <p>15 Did any other companies or organizations 10:20:20</p> <p>16 besides the ones you just mentioned participate in</p> <p>17 OSPF standardization?</p> <p>18 MR. PAK: Objection. Calls for</p> <p>19 speculation. Calls for expert testimony.</p> <p>20 THE WITNESS: So I'm certain that several 10:20:32</p> <p>21 others did. The best way to check would be to look</p> <p>22 at the IETF attendance records.</p> <p>23 BY MR. WONG: Q. When you say you're</p> <p>24 certain that several others did, why are you so</p> <p>25 certain? 10:20:43</p> <p style="text-align: right;">Page 50</p>	<p>1 standard?</p> <p>2 A. Not offhand.</p> <p>3 Q. Is IS-IS a well-known acronym in the</p> <p>4 networking industry?</p> <p>5 A. Largely, no. 10:22:41</p> <p>6 Q. How do you know the IS-IS acronym?</p> <p>7 A. I'm part of a small group who've made use</p> <p>8 of the protocol.</p> <p>9 Q. Is IS-IS a well-known acronym amongst those</p> <p>10 who make use of the IS-IS protocol? 10:23:01</p> <p>11 A. Yes, it is.</p> <p>12 Q. Why is it a smaller group that makes use of</p> <p>13 the IS-IS protocol?</p> <p>14 A. So IS-IS is part of the ISO protocol stack</p> <p>15 which ended up not having a significant market 10:23:15</p> <p>16 share, and thus there's a very small user base.</p> <p>17 Only a very small portion of the I net -- IP</p> <p>18 networking industry ended up using IS-IS, and so the</p> <p>19 number of people that use IS-IS for IP routing is</p> <p>20 very, very small. 10:23:38</p> <p>21 Q. How long has IS-IS been a well-known</p> <p>22 acronym amongst those who make use of the IS-IS</p> <p>23 protocol, to your knowledge?</p> <p>24 A. At least 1991.</p> <p>25 Q. And when did -- when did you first hear of 10:23:50</p> <p style="text-align: right;">Page 52</p>
<p>1 A. The IETF typically has dozens of people</p> <p>2 operating, working together on any given protocol.</p> <p>3 Q. And how do you -- how do you know that,</p> <p>4 Mr. Li?</p> <p>5 A. So that's -- I started participating in the 10:20:57</p> <p>6 IETF in 1991, and that's their standard way of</p> <p>7 working.</p> <p>8 Q. How many years have you been participating</p> <p>9 in the IETF since 1991?</p> <p>10 A. I participated quite consistently up and 10:21:15</p> <p>11 through about -- from 1991 to about 1999, and then</p> <p>12 it's been sporadic since then.</p> <p>13 Q. When you say the IETF typically has dozens</p> <p>14 of people working together on any given protocol,</p> <p>15 are those people from the same company or different 10:21:42</p> <p>16 companies?</p> <p>17 MR. PAK: Objection. Calls for</p> <p>18 speculation. Vague.</p> <p>19 THE WITNESS: Typically the group --</p> <p>20 working groups that are working on a protocol draw 10:21:54</p> <p>21 people from all sorts of different companies and</p> <p>22 organizations.</p> <p>23 BY MR. WONG: Q. Can you think of any</p> <p>24 protocols from the IETF where different</p> <p>25 organizations did not participate in creating the 10:22:12</p> <p style="text-align: right;">Page 51</p>	<p>1 the IS-IS acronym?</p> <p>2 A. 1991 when I joined Cisco.</p> <p>3 Q. Is "IP" a well-known industry term in the</p> <p>4 networking industry?</p> <p>5 A. Very well. 10:24:07</p> <p>6 Q. In your view, what other acronyms are as</p> <p>7 well-known as IP in the networking industry?</p> <p>8 MR. PAK: Objection. Calls for expert</p> <p>9 testimony.</p> <p>10 THE WITNESS: TCP, TCP/IP, WWW. 10:24:19</p> <p>11 BY MR. WONG: Q. How long has IP been a</p> <p>12 well-known acronym in the networking industry?</p> <p>13 A. At least since 1983.</p> <p>14 Q. And when did you first learn of the acronym</p> <p>15 IP? 10:24:44</p> <p>16 A. Approximately 1984 I took a class in</p> <p>17 computer networking and read the -- first read the</p> <p>18 RFCs on IP.</p> <p>19 Q. Is BGP a -- let me start that again.</p> <p>20 Is "BGP" a well-known term in the 10:25:25</p> <p>21 networking industry?</p> <p>22 A. It is.</p> <p>23 Q. How long has "BGP" been a well-known term</p> <p>24 in the networking industry?</p> <p>25 MR. PAK: Objection. Calls for expert 10:25:34</p> <p style="text-align: right;">Page 53</p>

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<p>1 testimony.</p> <p>2 THE WITNESS: Probably since about 1993.</p> <p>3 BY MR. WONG: Q. And why do you say that</p> <p>4 "BGP" has been a well-known term in the networking</p> <p>5 industry since 1993? 10:25:47</p> <p>6 A. I'm an expert in BGP.</p> <p>7 Q. Why do you say that you are an expert in</p> <p>8 BGP?</p> <p>9 A. I helped deploy BGP throughout the</p> <p>10 Internet. 10:26:00</p> <p>11 Q. What did you do to help deploy BGP</p> <p>12 throughout the Internet?</p> <p>13 A. So I was responsible for maintaining and</p> <p>14 enhancing BGP. I was responsible for doing a great</p> <p>15 deal of bug fixing to BGP. And as part of that, I 10:26:17</p> <p>16 ended up reimplementing much of Cisco's BGP code and</p> <p>17 replacing the vast majority of the code that they</p> <p>18 had.</p> <p>19 Q. And when did you first hear of the acronym</p> <p>20 BGP? 10:26:43</p> <p>21 A. Again, I believe it was in the late '80s as</p> <p>22 part of the Usenet group.</p> <p>23 Q. Is "DNS" a well-known term in the</p> <p>24 networking industry?</p> <p>25 A. It is. 10:27:07</p> <p style="text-align: right;">Page 54</p>	<p>1 What did that entail, maintaining DHCP</p> <p>2 relay functionality in Cisco IOS?</p> <p>3 A. Means that I had to look at the source</p> <p>4 code, read the DHCP RFC, test the behavior of the</p> <p>5 Cisco DHCP relay and then repair the functionality 10:28:49</p> <p>6 in the source code as necessary.</p> <p>7 Q. At some point, Mr. Li, you left Cisco's</p> <p>8 employment; correct?</p> <p>9 A. Several times.</p> <p>10 Q. When you started at Cisco in 1991, when did 10:29:12</p> <p>11 you leave?</p> <p>12 A. I believe it was 1996.</p> <p>13 Q. What did you do after you left Cisco in</p> <p>14 1996?</p> <p>15 A. After a while I joined Juniper Networks. 10:29:28</p> <p>16 Q. And what was Juniper's business at the</p> <p>17 time?</p> <p>18 A. Juniper was a startup in the computer</p> <p>19 networking space.</p> <p>20 Q. What was Juniper's main product at the 10:29:41</p> <p>21 time?</p> <p>22 A. They had no product initially, and their</p> <p>23 first product was a router, the M40, and I believe</p> <p>24 that came out in 1998.</p> <p>25 Q. Did you work on the M40 Juniper router? 10:29:59</p> <p style="text-align: right;">Page 56</p>
<p>1 Q. How long has "DNS" been a well-known term</p> <p>2 in the networking industry, Mr. Li?</p> <p>3 A. At least since late '80s.</p> <p>4 Q. When did you first learn of the term "DNS"?</p> <p>5 A. I was a sys admin at USC at the time. 10:27:19</p> <p>6 Could have been anywhere from '83 on.</p> <p>7 Q. How do you know that "DNS" has been a</p> <p>8 well-known term in the networking industry since the</p> <p>9 late 1980s?</p> <p>10 A. So I would helped convert USC from using 10:27:40</p> <p>11 host.text, which was previous system, to using DNS.</p> <p>12 Q. Is "DHCP" a well-known term in the</p> <p>13 networking industry?</p> <p>14 A. It is.</p> <p>15 Q. How long has "DHCP" been a well-known term 10:28:00</p> <p>16 in the networking industry?</p> <p>17 A. I don't know.</p> <p>18 Q. When did you first hear of the acronym</p> <p>19 DHCP?</p> <p>20 A. Probably 1991. 10:28:08</p> <p>21 Q. Why do you think you first heard of DHCP in</p> <p>22 1991?</p> <p>23 A. I helped maintain DHCP relay functionality</p> <p>24 in Cisco IOS.</p> <p>25 Q. What did that -- strike that. 10:28:21</p> <p style="text-align: right;">Page 55</p>	<p>1 A. I did.</p> <p>2 Q. Now, you said Juniper had no product</p> <p>3 initially.</p> <p>4 Did they have no product when you joined</p> <p>5 them in 1996? 10:30:16</p> <p>6 A. That's correct. We were a startup. We</p> <p>7 had -- I was Employee No. 5. We had an office, and</p> <p>8 that was it.</p> <p>9 Q. Who were Juniper's competitors?</p> <p>10 A. At the time it was Cisco. I believe Pluris 10:30:30</p> <p>11 came along shortly thereafter, but I don't know</p> <p>12 exactly when. There was another company called</p> <p>13 NetStar. Wellfleet. Proteon had not quite gone</p> <p>14 under.</p> <p>15 That's all I can remember. 10:31:03</p> <p>16 Q. Now, you said you were Employee No. 5;</p> <p>17 correct?</p> <p>18 A. Correct.</p> <p>19 Q. Where did the other first employees at</p> <p>20 Juniper come from? 10:31:15</p> <p>21 A. So the founder Pradeep Sindhu was coming</p> <p>22 out of Xerox PARC and Sun. Bjorn Lienres I believe</p> <p>23 was Sun. Dennis Ferguson, I knew him through IETF,</p> <p>24 and he was at -- running CANet, although I don't</p> <p>25 know who he was affiliated with. 10:31:36</p> <p style="text-align: right;">Page 57</p>


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<p>1 Q. What was your involvement in -- strike</p> <p>2 that.</p> <p>3 What is Exhibit 139?</p> <p>4 A. It appears to be a copy of RFC 1887.</p> <p>5 Q. What was your involvement in RFC 1887, 11:46:30</p> <p>6 Mr. Li?</p> <p>7 A. So Yakov and I coauthored or coedited this</p> <p>8 document in an attempt to document a routing</p> <p>9 protocol architecture -- a routing architecture for</p> <p>10 IPv6. 11:46:45</p> <p>11 Q. What is IPv6?</p> <p>12 A. That is the next version of the Internet</p> <p>13 Protocol. What a widely deployed right now today is</p> <p>14 known as IPv4. It has the problem that it does not</p> <p>15 have enough address space and can only support about 11:46:59</p> <p>16 4 billion hosts.</p> <p>17 IPv6 is a -- the next version that has been</p> <p>18 approved by the IETF and we're currently</p> <p>19 transitioning to IPv6, slowly.</p> <p>20 Q. We're currently transitioning today, you 11:47:17</p> <p>21 mean?</p> <p>22 A. Yes. Twenty years and counting.</p> <p>23 Q. And I'm sorry. What was the date on the</p> <p>24 document marked as Exhibit 138, Mr. Li?</p> <p>25 A. That appears to be March 1995. 11:47:33</p> <p style="text-align: right;">Page 106</p>	<p>1 acronym was designated by the IETF.</p> <p>2 Q. What do you mean, "this acronym was</p> <p>3 designated by the IETF"?</p> <p>4 A. So the IETF, in selecting this protocol to</p> <p>5 migrate to, decided that we should all refer to 11:49:10</p> <p>6 version 6 of the protocol as IPv6.</p> <p>7 Q. And how do you know that the IETF decided</p> <p>8 that we all should refer to version 6 of the IP</p> <p>9 protocol as IPv6?</p> <p>10 A. I was there as part of the discussion. 11:49:27</p> <p>11 Q. What vendors were part of that discussion?</p> <p>12 A. I'm sorry. I don't recall.</p> <p>13 Q. Were there more than one vendor part of</p> <p>14 that discussion?</p> <p>15 A. Yes, many. 11:49:40</p> <p>16 Q. Do you recall if Cisco was part of that</p> <p>17 discussion?</p> <p>18 A. I believe so.</p> <p>19 Q. Do you recall if Juniper was part of that</p> <p>20 discussion? 11:49:48</p> <p>21 A. I believe so.</p> <p>22 Q. Were there any other acronyms relating to</p> <p>23 routing protocols that the IETF decided should be</p> <p>24 used to refer to those protocols?</p> <p>25 A. Yes, many. 11:50:05</p> <p style="text-align: right;">Page 108</p>
<p>1 Q. Was this document -- strike that.</p> <p>2 When was the first version of the document</p> <p>3 marked as 138 completed, to your knowledge?</p> <p>4 A. I would have to check my notes to be</p> <p>5 precise but somewhere approximately 1994. 11:48:04</p> <p>6 Q. Turning back to Exhibit 139, Mr. Li, what</p> <p>7 is the date on this document?</p> <p>8 A. December 1995.</p> <p>9 Q. Is that the publication date for this RFC?</p> <p>10 A. Yes, it is. 11:48:19</p> <p>11 Q. And was the document that is shown</p> <p>12 Exhibit 139, was that completed before the</p> <p>13 publication date shown on Exhibit 139?</p> <p>14 A. Yes, it was.</p> <p>15 Q. Do you know approximately when? 11:48:34</p> <p>16 A. Somewhere between '93 and '94.</p> <p>17 Q. Did you come up with the term "IPv6,"</p> <p>18 Mr. Li?</p> <p>19 A. No, I did not.</p> <p>20 Q. Do you know who? 11:48:42</p> <p>21 A. No. Can't be specific.</p> <p>22 Q. Is IPv6 a well-known acronym in the</p> <p>23 networking industry?</p> <p>24 A. Yes, it is. It is a well-known acronym for</p> <p>25 Internet Protocol version 6, and this -- this 11:48:53</p> <p style="text-align: right;">Page 107</p>	<p>1 Q. What protocols did the IETF decide that</p> <p>2 everyone in the network industry should use in</p> <p>3 addition to IPv6?</p> <p>4 MR. PAK: Objection. Calls for expert</p> <p>5 testimony. 11:50:18</p> <p>6 THE WITNESS: So OSPF, BGP, RSVP, LDP,</p> <p>7 HTTP.</p> <p>8 BY MR. WONG: Q. Was "IS-IS" a -- a</p> <p>9 term -- strike that.</p> <p>10 Did the IETF have any role in the decision 11:50:50</p> <p>11 for IS-IS to be used by the networking industry?</p> <p>12 A. Somewhat. Again, IS-IS was originally</p> <p>13 standardized outside of the IETF. The IETF had the</p> <p>14 responsibility of managing the usage of IS-IS for</p> <p>15 Internet Protocol routing. 11:51:14</p> <p>16 Q. And to your knowledge, Mr. Li, based on</p> <p>17 your experience working in the industry, did various</p> <p>18 vendors use those acronyms that you just listed out</p> <p>19 for me?</p> <p>20 A. Yes, frequently. 11:51:38</p> <p>21 Q. To what extent was there any belief that</p> <p>22 these acronyms for routing protocols were</p> <p>23 proprietary to any single vendor?</p> <p>24 MR. PAK: Objection. Calls for</p> <p>25 speculation. 11:51:58</p> <p style="text-align: right;">Page 109</p>

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<p>1 THE WITNESS: So the acronyms were never 2 proprietary. 3 BY MR. WONG: Q. And on what facts do you 4 base that opinion, Mr. Li? 5 A. So the acronyms were never published with a 11:52:06 6 trademark or copyright notice attached to them. 7 Q. Did you ever believe personally that the 8 use of OSPF, BGP, IP or any of the other acronyms 9 that we've been discussing today were proprietary to 10 any vendor? 11:52:32 11 A. No. 12 Q. In your experience at multiple companies in 13 the networking industry, did anybody else that you 14 worked with express the belief to you that any of 15 these acronyms were proprietary to any vendor? 11:52:48 16 A. No. 17 Q. So in the 25 years that you have been 18 working in the networking industry, you have not 19 heard anybody express the belief that any of these 20 acronyms were proprietary to a single vendor? 11:53:08 21 A. That's correct. 22 Q. Turning back to Exhibit 139, Mr. Li, first 23 page further down, second paragraph from the bottom, 24 the word "domain" is used. 25 Do you see that? 11:53:23</p> <p style="text-align: right;">Page 110</p>	<p>1 by the court reporter and is attached hereto.) 2 BY MR. WONG: Q. The court reporter has 3 marked as Exhibit 140 a document bearing Control 4 Nos. ARISTANDCA00025927 to -25933. 5 Mr. Li, have you seen this document before? 11:55:28 6 A. I believe so. 7 Q. What is the document marked as Exhibit 140? 8 A. It appears to be a copy of RFC 1966, BGP 9 Route Reflection. 10 Q. Did you -- what was your involvement, if 11:55:45 11 any, in the creation of the document marked as 12 Exhibit 140? 13 A. So I helped discuss many of the concepts in 14 this document. As part of the development and 15 deployment of BGP, we found that we had numerous 11:56:02 16 scalability issues that we needed to overcome. 17 There were several approaches proposed. I helped 18 work on the Route Reflection proposal. 19 Some of the original work was proposed by 20 Dimitry Haskin of Bay Networks. And as part of the 11:56:20 21 IDR working group, we jointly discussed and came up 22 with this proposal. 23 Mr. Bates and Mr. Chandra eventually wrote 24 up the actual document as you see it here. 25 Q. What is BGP Route Reflection? 11:56:34</p> <p style="text-align: right;">Page 112</p>
<p>1 A. Yes. 2 Q. Did you come up with the word "domain"? 3 A. No, I did not. 4 Q. Do you know who did? 5 A. I believe that was Dr. Rechter. 11:53:31 6 Q. Do you know when Dr. Rechter came up with 7 the name "domain"? 8 A. I believe that he came up with that term 9 during the work for IDR, and that flowed -- and it 10 is semantically equivalent to Autonomous System, and 11:53:49 11 it flowed from his work in IDR into both this 12 document and the BGP specification. 13 Q. And how do you -- how do you know that, 14 Mr. Li? 15 A. Direct work with both of those 11:53:58 16 specifications. 17 Q. Okay. By the time of this RFC, 18 December 1995, was "domain" a well-known industry 19 term? 20 MR. PAK: Objection. Vague. 11:54:10 21 THE WITNESS: No, it was not well-known and 22 still is not very well-known. 23 MR. WONG: Let's mark this one as 140, 24 please. 25 (Exhibit 140 was marked for identification 11:54:45</p> <p style="text-align: right;">Page 111</p>	<p>1 A. BGP Route Reflection is a mechanism for 2 taking routing information and reflecting it from 3 one router to another through a third router. This 4 allows for better scalability because it fixes the 5 problem where BGP previously had where all BGP 11:57:03 6 routers within a particular AS had to be directly 7 interconnected. That led to some significant 8 computational and configuration management 9 challenges. 10 Q. Who came up with the phrase "Route 11:57:17 11 Reflection"? 12 A. I believe, but I'm not certain, that that 13 would be Mr. Haskin. 14 Q. And Mr. Haskin, to your recollection, 15 worked for Bay Networks? 11:57:33 16 A. It may have been Wellfleet at the time. 17 Q. And just by implication from your answer, 18 was Wellfleet acquired by Bay Networks? 19 A. Bay and -- I'm sorry. 20 Yes. Bay -- Bay was the merger of Synoptix 11:57:52 21 and Wellfleet, and I believe he was on the Wellfleet 22 side. 23 Q. And why do you think that Mr. Haskin came 24 up with the phrase "Route Reflection"? 25 A. So I believe he was the first one at IDR 11:58:11</p> <p style="text-align: right;">Page 113</p>

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1 I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby
3 certify:
4 That the foregoing proceedings were taken
5 before me at the time and place herein set forth;
6 that any witnesses in the foregoing proceedings,
7 prior to testifying, were administered an oath; that
8 a record of the proceedings was made by me using
9 machine shorthand which was thereafter transcribed
10 under my direction; that the foregoing transcript is
11 a true record of the testimony given.
12 Further, that if the foregoing pertains to
13 the original transcript of a deposition in a Federal
14 Case, before completion of the proceedings, review
15 of the transcript [X] was [] was not requested.
16 I further certify I am neither financially
17 interested in the action nor a relative or employee
18 of any attorney or any party to this action.
19 IN WITNESS WHEREOF, I have this date
20 subscribed my name.
21 Dated: February 3, 2016
22
23
24 
Susan F. Magee
25 CSR No. 11661, RPR, CCRR, CLR

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CONFIDENTIAL PURSUANT TO THE PROTECTIVE ORDER

1 UNITED STATES DISTRICT COURT
2 NORTHERN DISTRICT OF CALIFORNIA
3 SAN JOSE DIVISION
4

5 CISCO SYSTEMS, INC.,

6 Plaintiff,

7 vs.

No. 5:14-cv-05344-BLF (PSG)

8 ARISTA NETWORKS, INC.,

9 Defendant.
_____/

10
11
12 CONFIDENTIAL PURSUANT TO THE PROTECTIVE ORDER
13

14 VIDEOTAPED DEPOSITION OF TONG LIU

15 FRIDAY, JANUARY 15, 2016

16 PALO ALTO, CALIFORNIA
17
18
19
20

21 Reported by:

22 ANDREA M. IGNACIO, CSR, RPR, CRR, CCRR, CLR

23 CSR LICENSE NO. 9830

24 JOB NO. 2211574

25 Pages 1 - 215

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CONFIDENTIAL PURSUANT TO THE PROTECTIVE ORDER

1 UNITED STATES DISTRICT COURT	1 I N D E X
2 NORTHERN DISTRICT OF CALIFORNIA	2
3 SAN JOSE DIVISION	3 WITNESS: Tong Liu
4	4
5 CISCO SYSTEMS, INC.,	5 EXAMINATION PAGE
6 Plaintiff,	6 By Mr. Wong 7, 207
7 vs. No. 5:14-cv-05344-BLF(PSG)	7 By Mr. Pak 185
8 ARISTA NETWORKS, INC.,	8
9 Defendant.	9 E X H I B I T S
10 _____/	10 EXHIBIT PAGE
11	11 Exhibit 92 Amended Exhibit F; 45 pgs. 67
12	12 Exhibit 93 IEEE Standard for a Precision 84
13	13 Clock Synchronization Protocol
14 Videotaped Deposition of Tong Liu, taken on	14 for Networked Measurement and
15 Friday, January 15, 2016, pursuant to notice, on	15 Control Systems, Bates
16 behalf of the Defendants, at 610 Page Mill Road,	16 ARISTANDCA00031733 - '32021;
17 Palo Alto, California before me, ANDREA M. IGNACIO,	17 289 pgs.
18 CSR, RPR, CRR, CCRR, CLR ~ CSR License No. 9830	18 Exhibit 94 IEEE1588 Precision Time Protocol 100
19	19 Platform-Independent Software
20	20 Functional Specification, Bates
21	21 CSI-CLI-00610555 - '81; 27 pgs.
22	22 Exhibit 95 6-25-08 E-mail, Subject: Seeking 122
23	23 permission for adding PTP CLI
24	24 comments; Bates CSI-CLI-00846643;
25	25 1 pg.
Page 2	Page 4
1 A P P E A R A N C E S:	1 E X H I B I T S (Continued.)
2	2
3	3 EXHIBIT PAGE
4 ON BEHALF OF THE PLAINTIFF CISCO SYSTEMS, INC., and	4 Exhibit 96 6-25-08 E-mail, Subject: Seeking 124
5 the WITNESS:	5 permission for adding PTP CLI
6 QUINN EMANUEL URQUHART & SULLIVAN, LLP	6 commands, Bates CSI-CLI-00608739
7 By: SEAN S. PAK, Esq.	7 - '40; 2 pgs.
8 50 California Street, 22nd Floor	8 Exhibit 97 6-26-08 E-mail, Subject: Seeking 128
9 San Francisco, California 94111	9 permission for adding PTP CLI
10 Phone: 415.875.6600	10 commands, Bates CSI-CLI-00846656
11 seanpak@quinnemanuel.com:	11 - '57; 2 pgs.
12	12 Exhibit 98 Cisco Nexus 7000 Series NX-OS 157
13	13 System Management Command
14 ON BEHALF OF THE DEFENDANT ARISTA NETWORKS, INC.:	14 Reference, Bates CSI-CLI-00194055
15 KEKER & VAN NEST LLP	15 - '9480; 626 pgs.
16 By: RYAN WONG, Esq.	16
17 633 Battery Street	17 ---oOo---
18 San Francisco, California 94111-1809	18
19 Phone: 415.773.6682	19 PREVIOUSLY MARKED EXHIBITS
20 rwong@kvn.com	20
21	21 Exhibit 53 CLI Design and Review Guide, Bates
22 ALSO PRESENT: Kevin Foor, Videographer	22 CSI-ANI-00073381 - '.000014; 15 pgs.
23	23
24 ---oOo---	24
25	25
Page 3	Page 5

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<p>1 PALO ALTO, CALIFORNIA 2 FRIDAY, JANUARY 15, 2016 3 9:32 A.M. 4 5 6 7 THE VIDEOGRAPHER: Good morning. We are on 8 the record at 9:32 on January 15th of the year 2016. 9 This is the video deposition of Tong Liu. 10 My name is Kevin Foor. I'm here with court 11 reporter Andrea Ignacio. And we are here from 12 Veritext Legal Solutions at the request of Kecker & 13 Van Nest. 14 This deposition is being held at Wilson 15 Sonsini Goodrich & Rosati in Palo Alto. 16 The caption of the case is Cisco Systems, 17 Inc., v. Arista Networks. That is case 514-CV-05344 18 ELF BSG. 19 Please note that audio and video recording 20 will take place unless all parties agree to go off the 21 record. Microphones are sensitive and may pick up 22 whispers, private conversations, and cell 23 interference. 24 I'm not related to any party in this action, 25 nor am I interested financially in the outcome in any</p> <p style="text-align: right;">Page 6</p>	<p>1 A At work, I go with Toni. 2 Q Could you spell Toni for me, please. 3 A T-O-N-I. 4 Q Okay. Have you gone by Toni Liu for -- for 5 what period of time have you gone by Toni Liu? 6 A That name is only used at work. It's not an 7 officially alternative name. 8 Q And besides Toni Liu, have you gone by any 9 other names, Ms. Liu? 10 A No. 11 Q Could you please state your home address. 12 A 1741 Pear Tree Lane, Mountain View. 13 Q And do you have any personal e-mail addresses 14 that you use? 15 A Yes. 16 Q Could you please tell me what those are. 17 A tonieliu@yahoo.com. 18 Q Okay. Any other e-mail addresses? 19 A liu.toni@gmail.com. 20 Q Thank you. 21 Who is your current employer, Ms. Liu? 22 A Aruba Networks. 23 Q Do you have a work address for Aruba 24 Networks? 25 A 1322 Crossman Avenue, Sunnyvale.</p> <p style="text-align: right;">Page 8</p>
<p>1 way. 2 If there are any objections to proceeding, 3 please state them at the time of your appearance. 4 And if you would please state your 5 appearances. 6 MR. WONG: Ryan Wong from Kecker & Van Nest 7 for defendant Arista Networks. 8 MR. PAK: Sean Pak of Quinn Emanuel, 9 representing Cisco and the witness. 10 THE VIDEOGRAPHER: Thank you. 11 If the court reporter would please swear the 12 witness, we can begin. 13 14 TONG LIU, 15 having been sworn as a witness 16 by the Certified Shorthand Reporter, 17 testified as follows: 18 19 EXAMINATION 20 BY MR. WONG: 21 Q Good morning, Ms. Liu. 22 A Good morning. 23 Q Please state your full name for the record. 24 A Tong Liu. 25 Q Do you go by any other names, Ms. Liu?</p> <p style="text-align: right;">Page 7</p>	<p>1 Q Do you have a work e-mail address for your 2 job at Aruba? 3 A toniliu@arubanetworks.com. 4 Q Now, Ms. Liu, are you represented by counsel 5 at this deposition? 6 A I'm represented by attorney Mr. Sean Pak. 7 Q Okay. And do you understand that you are 8 testifying here today in response to a subpoena issued 9 in this lawsuit? 10 A Yes. 11 Q Okay. Have you seen the subpoena issued in 12 this lawsuit? 13 A Yes. 14 Q Did you see the document requests that 15 accompanied the subpoena in this lawsuit? 16 A The document? 17 Q Requests for documents. 18 A Requests for documents? 19 Yes, I have seen that part. 20 Q And did you search for documents that fell 21 within the categories within the subpoena? 22 A I looked around. I don't have any of those 23 documents. 24 Q Ms. Liu, have you ever been deposed before? 25 A No. This is the first time.</p> <p style="text-align: right;">Page 9</p>

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<p>1 starting in 2008." 2 Do you see that? 3 A Yes. 4 Q Did I read that correctly? 5 A Yes. 6 Q Is that referring to the implementation that 7 you did, Ms. Liu? 8 A Yes. We were DSBU, and X-Men 2 was the 9 internal release number we were using for -- 10 Q Did you come up with X-Men 2? 11 A Do the -- 12 Q Did you come up with the term X-Men 2? 13 A No. 14 They came up with X-Men 2. We were using it. 15 Q And what does DSBU stand for? 16 A Data switching business unit. 17 Q Okay. 18 A No, desktop switching. Sorry. 19 Q And was the IE 3000 platform -- is that the 20 industrial Ethernet device that we've been talking 21 about? 22 A Yes, it's the industrial Ethernet switch. 23 Q Okay. You can set that one aside. 24 A Okay. 25 Q Turning back to Exhibit 93, the -- the large</p> <p style="text-align: right;">Page 102</p>	<p>1 actually, are you on page 7? 2 A Yes. 3 Q At the bottom of page 7, there is a 4 section 3.2 called "Acronyms and Abbreviations." 5 Do you see that? 6 A Right. 7 Q These are acronyms and abbreviations that are 8 used in the PTP IEEE standard; correct? 9 A Yes. 10 Q And, on the following page, page 8, there is 11 an acronym PTP there. 12 Do you see that? 13 A Yes. 14 Q It stands for precision time protocol? 15 A Yes. 16 Q So it was well known that PTP meant precision 17 time protocol; correct? 18 MR. PAK: Objection; calls for speculation; 19 assumes facts not in evidence; calls for expert 20 testimony. 21 THE WITNESS: When you say "well known," is 22 it -- what's the scope of well known? 23 MR. WONG: Q. It was well known by people in 24 the networking industry, right -- 25 MR. PAK: Same --</p> <p style="text-align: right;">Page 104</p>
<p>1 document in front of you. 2 A (Witness complies.) 3 Q You did not come up with the term PTP; 4 correct? 5 A No. 6 Q The -- the acronym PTP was in use before you 7 began implementing PTP functionality into Cisco's 8 industrial Ethernet device; correct? 9 A You mean before we implement the protocol, no 10 one was using PTP term in Cisco? 11 Q No. 12 I'm -- I'm just saying, the acronym PTP -- 13 A Right. 14 Q -- was in use before you began implementing 15 PTP functionality into Cisco's industrial Ethernet 16 devices; correct? 17 A Yes, I -- yeah, the term exist -- 18 Q Right. 19 A -- about the -- 20 Q It -- it -- it was in the -- the document 21 here marked as Exhibit -- 22 A Yes. 23 Q -- 93; correct? 24 A Yes. 25 Q And, in fact, on page 7 of Exhibit 93 --</p> <p style="text-align: right;">Page 103</p>	<p>1 MR. WONG: Q. -- that PTP meant precision 2 time protocol? 3 MR. PAK: Same objections. 4 THE WITNESS: I don't think it's well known 5 in the entire networking industry. 6 MR. WONG: Okay. 7 Q Was there a subset of the networking industry 8 where PTP was known to refer to the PTP in Exhibit 93? 9 MR. PAK: Objection; vague; calls for 10 speculation; assumes facts not in evidence. 11 THE WITNESS: It's not as normal a term as IP 12 or MAC. The -- the term is still -- I think even for 13 people who are working on the Catalyst switches, it's 14 not a very well-known term. 15 MR. WONG: Okay. 16 Q But certainly, the IEEE standard marked as 17 Exhibit 93 defines the PTP acronym; correct? 18 A Yes. 19 Q And uses the PTP acronym -- 20 A Yes. 21 Q -- to describe precision time protocol; 22 correct? 23 A True. 24 Q And it uses that PTP acronym to describe the 25 PTP functionality that you implemented in Cisco's</p> <p style="text-align: right;">Page 105</p>

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<p>1 industrial Ethernet devices; right?</p> <p>2 MR. PAK: Objection; assumes facts not in</p> <p>3 evidence; mischaracterizes the witness' prior</p> <p>4 testimony.</p> <p>5 THE WITNESS: In this spec, yes.</p> <p>6 MR. WONG: Q. Well, is PTP used in Cisco's</p> <p>7 industrial Ethernet device in a different way than</p> <p>8 what PTP means in Exhibit 93?</p> <p>9 MR. PAK: Objection; vague.</p> <p>10 MR. WONG: Let me rephrase the question.</p> <p>11 Q In the five commands that you're associated</p> <p>12 with in Exhibit 92 --</p> <p>13 A Right.</p> <p>14 Q -- all of them use the acronym PTP; correct?</p> <p>15 A Yes.</p> <p>16 Q That PTP refers to the same PTP that is shown</p> <p>17 on page 8 of Exhibit 93; right?</p> <p>18 MR. PAK: Objection; vague.</p> <p>19 THE WITNESS: I think when I chose the</p> <p>20 command, yes, I used PTP to mean the same as precision</p> <p>21 time protocol --</p> <p>22 MR. WONG: Right.</p> <p>23 THE WITNESS: -- as in the spec.</p> <p>24 MR. WONG: Q. As in the spec and, in fact,</p> <p>25 as in -- as on page 8 of Exhibit 93, correct, which</p> <p style="text-align: right;">Page 106</p>	<p>1 Q And then subsection 3.1 says "Definitions."</p> <p>2 Do you see that?</p> <p>3 A Yes.</p> <p>4 Q Definition 3.1.4 in the IEEE PTP</p> <p>5 specification defines the term "clock."</p> <p>6 Do you see that?</p> <p>7 A Yes, uh-huh.</p> <p>8 Q What is the definition of clock in the IEEE</p> <p>9 standard?</p> <p>10 A It's no participating in the precision time</p> <p>11 protocol, PTP, that is capable of providing a</p> <p>12 measurement of the passage of time since a defined</p> <p>13 epoch.</p> <p>14 Q And you have read these definitions before</p> <p>15 you began developing the PTP functionality in Cisco's</p> <p>16 industrial Ethernet devices; right?</p> <p>17 A Yes.</p> <p>18 Q So you were familiar with these IEEE defined</p> <p>19 terms before you began working on the PTP</p> <p>20 functionality; correct?</p> <p>21 A Yes.</p> <p>22 Q And you knew they were in the IEEE standard;</p> <p>23 correct?</p> <p>24 A Yes.</p> <p>25 Q Okay. Now, the definition of clock that you</p> <p style="text-align: right;">Page 108</p>
<p>1 lists the PTP -- which lists PTP as an acronym;</p> <p>2 correct?</p> <p>3 MR. PAK: Objection; vague.</p> <p>4 THE WITNESS: I would say the meanings are</p> <p>5 the same, that they mean precision time protocol.</p> <p>6 MR. WONG: Q. Well, the -- the words are the</p> <p>7 same, too; correct?</p> <p>8 PTP in the command is the same three letters</p> <p>9 that appear on page 8 of Exhibit 93; correct?</p> <p>10 A It's the same acronym.</p> <p>11 Q And they're referring to the same protocol;</p> <p>12 correct?</p> <p>13 A Yes.</p> <p>14 Q Now, if you'll turn to page 4 of Exhibit 93.</p> <p>15 A (Witness complies.) Okay.</p> <p>16 Q You can take off the -- well --</p> <p>17 A This is --</p> <p>18 Q -- maybe you want to keep that together,</p> <p>19 actually.</p> <p>20 A Right.</p> <p>21 Q On page 4 of Exhibit 93, there is a large</p> <p>22 heading No. 3 entitled:</p> <p>23 "Definitions, acronyms, and abbreviations."</p> <p>24 Do you see that?</p> <p>25 A Yes.</p> <p style="text-align: right;">Page 107</p>	<p>1 read, is that your understanding of what a clock is in</p> <p>2 the context of PTP?</p> <p>3 MR. PAK: Objection; vague.</p> <p>4 THE WITNESS: So, in the context of PTP</p> <p>5 standard or spec, yes, a clock means this.</p> <p>6 MR. WONG: Q. A clock means what it says on</p> <p>7 page 4 of --</p> <p>8 A Yes.</p> <p>9 Q -- Exhibit 93?</p> <p>10 A Right.</p> <p>11 Q And you -- you -- you did not come up with</p> <p>12 the term clock in the context of PTP; correct?</p> <p>13 A No.</p> <p>14 Q All right.</p> <p>15 Clock is just a defined term in the IEEE</p> <p>16 standard marked as Exhibit 93; correct?</p> <p>17 A Yes.</p> <p>18 Q Okay. If you'll look at page 6 of</p> <p>19 Exhibit 93.</p> <p>20 A (Witness complies.) Right.</p> <p>21 Q Term 3.1.23; do you see that?</p> <p>22 It defines the term "parent clock" correct?</p> <p>23 A Yes.</p> <p>24 Q What's the definition of parent clock?</p> <p>25 A The master clock to which a clock is</p> <p style="text-align: right;">Page 109</p>

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<p>1 synchronized.</p> <p>2 Q And is that your understanding of what a</p> <p>3 parent clock is in the context of PTP?</p> <p>4 A It is.</p> <p>5 Q And you get that understanding from the IEEE</p> <p>6 standard marked as Exhibit 93; correct?</p> <p>7 A Yes.</p> <p>8 Q All right.</p> <p>9 You don't disagree with that definition;</p> <p>10 correct?</p> <p>11 A No.</p> <p>12 Q And you don't disagree with the definition of</p> <p>13 clock in the IEEE PTP standard; right?</p> <p>14 A No, I don't.</p> <p>15 Q Okay. Now, the term parent also refers to</p> <p>16 the parent clock in a PTP context; correct?</p> <p>17 A The term parent --</p> <p>18 MR. PAK: Objection; vague.</p> <p>19 THE WITNESS: -- in this document --</p> <p>20 MR. WONG: Yes.</p> <p>21 THE WITNESS: -- whenever -- yeah, a parent</p> <p>22 clock is used, it means the definition here.</p> <p>23 MR. WONG: Sure.</p> <p>24 THE WITNESS: Is that the question?</p> <p>25 MR. WONG: Sure.</p> <p style="text-align: right;">Page 110</p>	<p>1 Do you see that?</p> <p>2 A I haven't found that sentence.</p> <p>3 Oh, yeah, found it.</p> <p>4 Q Okay. That sentence in the IEEE standard</p> <p>5 uses the term parents; do you see that?</p> <p>6 A Yes.</p> <p>7 Q Is it your understanding that -- that that</p> <p>8 parents term refers to a parent clock?</p> <p>9 MR. PAK: If you need to take some time to</p> <p>10 look at the document more closely, you can do that.</p> <p>11 THE WITNESS: Yes.</p> <p>12 MR. PAK: Okay.</p> <p>13 THE WITNESS: I think it -- it's referring to</p> <p>14 the parent clock.</p> <p>15 MR. WONG: Right.</p> <p>16 Q There's no ambiguity in the context of the</p> <p>17 IEEE standard that parent refers to parent clock;</p> <p>18 right?</p> <p>19 A Yes. Here, it means -- yeah, it does mean</p> <p>20 parent clock.</p> <p>21 Q Okay. So, in the context of the PTP</p> <p>22 standard, referring to the parent of a clock is</p> <p>23 referring to the defined term parent clock that we</p> <p>24 discussed a few minutes ago; correct?</p> <p>25 A Yes.</p> <p style="text-align: right;">Page 112</p>
<p>1 Q If you'd turn to page 53 of Exhibit 93. Let</p> <p>2 me know when you're there.</p> <p>3 A 53?</p> <p>4 Q The ending control number for that is '31805.</p> <p>5 A (Witness complies.) Yeah, I found it.</p> <p>6 Q Okay. If you look above -- so, near the</p> <p>7 bottom of the page, you see in bold:</p> <p>8 "7.6.2 PTP Device Attributes."</p> <p>9 Do you see that?</p> <p>10 A Yes.</p> <p>11 Q Okay. Right above that, there are -- there</p> <p>12 are two sort of indented bullet points, I guess, or</p> <p>13 dashes.</p> <p>14 Do you see that?</p> <p>15 A (Witness nods head.)</p> <p>16 Q And then, right above that is a sentence that</p> <p>17 begins with the words "ordinary and boundary clocks."</p> <p>18 Do you see that?</p> <p>19 A Ordinary and boundary clocks.</p> <p>20 Q Yep.</p> <p>21 A Okay.</p> <p>22 Q So that full sentence says:</p> <p>23 "Ordinary and boundary clocks may keep</p> <p>24 statistics on the performance of their parents using</p> <p>25 the following attributes."</p> <p style="text-align: right;">Page 111</p>	<p>1 Q Okay. Now, if you look on that same page,</p> <p>2 underneath the heading "PTP Device Attributes," you</p> <p>3 see the term "Priority 1"?</p> <p>4 A Yes.</p> <p>5 Q What is a PTP device attribute?</p> <p>6 A It's certain characteristics of a PTP clock.</p> <p>7 Q That are defined by the IEEE standard;</p> <p>8 correct?</p> <p>9 A Yes, uh-huh.</p> <p>10 Q Okay. And these are device attributes that</p> <p>11 are mandatory to be supported to comply with the PTP</p> <p>12 standard; correct?</p> <p>13 MR. PAK: Objection; calls for expert</p> <p>14 testimony.</p> <p>15 MR. WONG: Q. If you know.</p> <p>16 A I didn't see anything as mandatory here.</p> <p>17 Q Okay. If you read the description of</p> <p>18 priority 1, it says:</p> <p>19 "The attribute priority 1 is used in the</p> <p>20 execution of the best master clock algorithm; see</p> <p>21 9.3.2. Lower values take precedence. The</p> <p>22 initialization value of priority 1 is specified in a</p> <p>23 PTP profile. The value of priority 1 shall be</p> <p>24 configurable to any value in the range 0 to 255,</p> <p>25 unless restricted by limits established by an</p> <p style="text-align: right;">Page 113</p>

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<p>1 applicable PTP protocol" -- I'm sorry -- "PTP 2 profile." 3 Did I read that correctly? 4 A Yes. 5 Q Okay. Now, the -- the definition says the 6 value of priority 1 shall be configurable. 7 Do you see that? 8 A Yes. 9 Q "Shall" is a mandatory term in the IEEE 10 standard; correct? 11 MR. PAK: Same objection; calls for expert 12 testimony. 13 THE WITNESS: Would you please rephrase that 14 question. 15 MR. WONG: Sure. 16 Q "Shall" is a mandatory term -- strike that. 17 "Shall" indicates a mandatory requirement in 18 the IEEE standard; correct? 19 MR. PAK: Objection; calls for expert 20 testimony. 21 MR. WONG: Q. And it may help -- 22 A I can say only my understanding, that it's 23 recommending that priority 1 is an attribute, that 24 this is a configurable value. 25 Q If you'd turn to page 9 of the same document,</p> <p style="text-align: right;">Page 114</p>	<p>1 Q So, it is a -- it is a requirement to comply 2 with the standard for there to be a value of 3 priority 1 that is configurable as described here on 4 page 53; correct? 5 A Yes. 6 MR. PAK: Same -- and again same objection; 7 calls for expert testimony. 8 MR. WONG: Q. If you'd turn -- I'm sorry. 9 And -- and do you have any disagreements with 10 the description of priority 1 here on page 53? 11 A No. 12 Q Okay. If you'd turn to the next page in 13 Exhibit 93. 14 A (Witness complies.) 15 Q At the top, it has another attribute, 16 "priority 2." 17 Do you see that? 18 A Yes. 19 Q And the definition of priority 2 also has a 20 sentence that says: 21 "The value of priority 2 shall be 22 configurable to any value in the range 0 to 255, 23 unless restricted by limits established by an 24 applicable PTP profile." 25 Do you see that?</p> <p style="text-align: right;">Page 116</p>
<p>1 Exhibit 93. 2 A (Witness complies.) Okay. 3 Q And you see right in the middle of the page, 4 it says "word usage"; correct? 5 A Uh-huh, I see. 6 Q And it defines "shall" in 4.2.1. 7 Do you see that? 8 A Yes. 9 Q And this is -- and you -- you read the entire 10 standard before you implemented any of the 11 functionality with Cisco's products; right? 12 A Yes. 13 Q The definition of "shall" -- well, why don't 14 you please read the definition of "shall." 15 A "The word 'shall,' which is equivalent to 'is 16 required to,' is used to indicate mandatory 17 requirements strictly to be followed in order to 18 conform to the standard and from which no deviation is 19 permitted." 20 Q Okay. And you understood that when you read 21 the standard; correct? 22 A Yes. 23 Q Okay. If you'd turn back to page 53 that we 24 were just on. 25 A (Witness complies.) Right.</p> <p style="text-align: right;">Page 115</p>	<p>1 A Uh-huh, yes. 2 Q So the value of priority 2 -- strike that. 3 So it's a requirement to comply with the PTP 4 standard for the value of priority 2 to be 5 configurable as described here on page 54; correct? 6 MR. PAK: Same objection; calls for expert 7 testimony. 8 THE WITNESS: Yes, it's a parameter. 9 MR. WONG: Right. 10 THE WITNESS: Right. 11 Q And that's your understanding, based upon the 12 standard's own definition of what "shall" means within 13 the document; correct? 14 A Yes. 15 Q Okay. And when you implemented the PTP 16 functionality in Cisco's devices, was it your 17 intention to comply with the standard -- with the IEEE 18 standard marked as Exhibit 93? 19 MR. PAK: Objection; vague. 20 THE WITNESS: Again, there were certain 21 multiple aspects of it; right? 22 MR. WONG: Q. But, with respect to the two 23 device attributes that we just discussed, was it your 24 intention to comply with the IEEE standard? 25 MR. PAK: Same objection; vague.</p> <p style="text-align: right;">Page 117</p>

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<p>1 THE WITNESS: I think we intended to make 2 these two parameters as configurable for PTP clock. 3 So, for that part, yes, the compliance is that we 4 shall make these as configurable values. 5 MR. WONG: Q. As required by the IEEE 6 standard marked as -- 7 A Yes. 8 Q -- Exhibit 93; correct? 9 A Yes. 10 Q Is it possible to have vendor 11 interoperability for PTP if you don't comply with the 12 PTP standard? 13 MR. PAK: Objection; calls for expert 14 testimony; vague. 15 MR. WONG: Q. In your view? 16 MR. PAK: Same objections. 17 THE WITNESS: In my view, the basic external 18 behaviors needs to be consistent to be interoperable. 19 MR. WONG: Q. And are the device attributes 20 that we just discussed, priority 1 and priority 2, are 21 those part of those external behaviors that need to be 22 consistent in order to support interoperability? 23 MR. PAK: Same objection; vague. 24 THE WITNESS: I think the priority value 25 being configurable, changeable by users is -- as you</p> <p style="text-align: right;">Page 118</p>	<p>1 "Sync (multicast) message transmission 2 interval." 3 Do you see that? 4 A Yes. 5 Q Now, the sentence below that says: 6 "The port DS.log sync interval shall specify 7 the mean time interval between successive sync 8 messages, i.e., the sync interval, when transmitted as 9 multicast messages." 10 Do you see that? 11 A Yes. 12 Q Did I read that correctly? 13 A Yes. 14 Q So the -- and that sentence, by the way, uses 15 the word "shall" again; correct? 16 A Yes. 17 Q That indicates that this is a required -- a 18 requirement of the PTP standard; correct? 19 MR. PAK: Objection; calls for expert 20 testimony. 21 THE WITNESS: I -- my understanding is this 22 is to be supported to implement a PTP protocol. 23 MR. WONG: Q. And that understanding is 24 based upon the definition of "shall" provided on 25 page 9 of the standard; correct?</p> <p style="text-align: right;">Page 120</p>
<p>1 said, as required -- it's required to be 2 interoperable -- 3 MR. WONG: Okay. 4 THE WITNESS: -- at the PlugFest. 5 MR. WONG: Q. So, to comply with the PTP 6 standard, there have to be configurable device 7 attributes called priority 1 and priority 2 as 8 described on pages 53 and 54 of Exhibit 93? 9 MR. PAK: Objection; calls for expert 10 testimony. Objection; vague. 11 THE WITNESS: My understanding is these two 12 parameters, which needs to be configurable. 13 MR. WONG: Okay. 14 Q To comply with the PTP standard? 15 A Yes. 16 Q Okay. If you'd turn to page 62 of that same 17 document, Exhibit 93. Let me know when you're there. 18 A (Witness complies.) Yes, I'm on page 63. 19 Q 62. I'm sorry. 20 A 62. (Witness complies.) Okay. 21 Q Okay. About two-thirds down on that page 62, 22 there is a subheading 7.7.2.3. 23 Do you see that? 24 A Yes. 25 Q And the text next to that is:</p> <p style="text-align: right;">Page 119</p>	<p>1 A Yes, uh-huh. 2 Q That definition of "shall" says that no 3 deviation is permitted; correct? 4 If you need to look at page 9, you can 5 confirm that. 6 A Right. No deviation of the behavior, I 7 guess. 8 Q Okay. 9 A Right. 10 Q Is that your understanding? 11 A Right. 12 Q So turning -- so you're still on page 62. 13 The IEEE standard uses the term "sync interval" to 14 describe the mean time interval between successive 15 sync messages; correct? 16 A Sync interval as specified in the text here? 17 Q Yes. 18 A Right. Yes. 19 Q So, do you agree that the IEEE standard 20 marked as Exhibit 93 on page 62 defines the sync 21 interval as the mean time interval between successive 22 sync messages when transmitted as multicast messages? 23 A Yes. 24 Q Okay. Do you have any disagreements with 25 that definition?</p> <p style="text-align: right;">Page 121</p>

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<p>1 correct?</p> <p>2 A Yes.</p> <p>3 Q And if you'll look briefly at Exhibit 96.</p> <p>4 Let me know when you're there.</p> <p>5 A Yes.</p> <p>6 Q Under "interface level config commands,"</p> <p>7 listed there is "PTP sync-interval" with a hyphen.</p> <p>8 Do you see that?</p> <p>9 A PTP sync-interval, yes.</p> <p>10 Q With a hyphen --</p> <p>11 A With a hyphen.</p> <p>12 Q -- between sync and interval?</p> <p>13 A Right.</p> <p>14 Q Did you remove the hyphen based upon</p> <p>15 Mr. Woodman's directive?</p> <p>16 A Yes, I believe that should be true.</p> <p>17 Q And the purpose of removing the hyphen, as</p> <p>18 described in Mr. Woodman's e-mail marked as</p> <p>19 Exhibit 97, was to take advantage of the auto complete</p> <p>20 functionality; correct?</p> <p>21 MR. PAK: Objection; mischaracterizes the</p> <p>22 witness' testimony; incomplete.</p> <p>23 THE WITNESS: I would say both auto</p> <p>24 completion and hierarchy as --</p> <p>25 MR. WONG: Q. What -- go ahead.</p> <p style="text-align: right;">Page 134</p>	<p>1 hierarchy existed before you started adding PTP</p> <p>2 commands to the software?</p> <p>3 A Yes.</p> <p>4 Q And you were aware of that?</p> <p>5 A I'm -- yeah, I was aware of that.</p> <p>6 Q Right.</p> <p>7 And so you modeled -- you modeled your</p> <p>8 commands based upon the hierarchy concept that already</p> <p>9 existed in Cisco software?</p> <p>10 MR. PAK: Objection; vague.</p> <p>11 THE WITNESS: I think I was thinking it would</p> <p>12 be good to have that part for these CLI commands.</p> <p>13 MR. WONG: Okay. Okay.</p> <p>14 I think it's a good time to take a break.</p> <p>15 THE VIDEOGRAPHER: It is 1:01.</p> <p>16 We are going off the record.</p> <p>17 Please don't forget your mics.</p> <p>18 (Lunch break taken at 1:01 p.m.)</p> <p>19 ---oOo---</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 136</p>
<p>1 A You go ahead first.</p> <p>2 Q What -- in your mind, what is the difference</p> <p>3 between auto completion functionality and hierarchy?</p> <p>4 A Hierarchy -- let's say there is PTP sync</p> <p>5 interval, PTP sync limit. So, when we type PTP,</p> <p>6 space, sync, and then question mark, that gives you</p> <p>7 the next level of that command, which is interval. So</p> <p>8 this is the hierarchy part, which won't be there if</p> <p>9 there is a hyphen. So, all of them would be under</p> <p>10 PTP, and you have all of the options.</p> <p>11 Q Did you come up with the idea to have a</p> <p>12 hierarchy for these PTP commands?</p> <p>13 MR. PAK: Objection; vague.</p> <p>14 THE WITNESS: Meaning -- can you rephrase</p> <p>15 that. Did I come up with the concept?</p> <p>16 MR. WONG: You just described the concept of</p> <p>17 a hierarchy.</p> <p>18 Q Was that concept -- did that concept</p> <p>19 originate from you?</p> <p>20 MR. PAK: Objection; vague.</p> <p>21 THE WITNESS: A lot of Cisco CLI commands</p> <p>22 has -- have hierarchies. That part I knew even before</p> <p>23 I developed these commands.</p> <p>24 MR. WONG: Okay.</p> <p>25 Q So the organization of Cisco commands in a</p> <p style="text-align: right;">Page 135</p>	<p>1 AFTERNOON SESSION</p> <p>2 1:41 P.M.</p> <p>3</p> <p>4</p> <p>5</p> <p>6 THE VIDEOGRAPHER: We are back on the record.</p> <p>7 It is 1:41.</p> <p>8 MR. WONG: Q. So, Ms. Liu, before the lunch</p> <p>9 break, we talked about the five commands that are</p> <p>10 associated with you in Exhibit 92.</p> <p>11 A Yes.</p> <p>12 Q One of the commands is "PTP priority 1."</p> <p>13 A Yes.</p> <p>14 Q Do you see that?</p> <p>15 A Uh-huh.</p> <p>16 Q What is the function that the "PTP</p> <p>17 priority 1" command performs?</p> <p>18 A It configures the priority 1 parameter for</p> <p>19 the PTP clock.</p> <p>20 Q Okay. And when you say "for the PTP clock,"</p> <p>21 you mean PTP as defined by the IEEE standard; right?</p> <p>22 A Yes.</p> <p>23 Q You're not talking about a different PTP</p> <p>24 that's separate from the IEEE standard; right?</p> <p>25 A No.</p> <p style="text-align: right;">Page 137</p>

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<p>1 Q Okay. And the PTP in the command "PTP 2 priority 1" refers to the IEEE standard; correct? 3 MR. PAK: Objection; vague. 4 THE WITNESS: It refers to, yeah, PTP. 5 MR. WONG: Q. It refers to the IEEE PTP 6 standard that we marked as Exhibit 93; correct? 7 A Yes. 8 Q Okay. And the use of the word PTP in all 9 five of the commands that are associated with you in 10 Exhibit 92, they all come from the IEEE standard 11 marked as Exhibit 93; correct? 12 MR. PAK: Objection; vague; mischaracterizes 13 the witness' testimony. 14 THE WITNESS: You mean the PTP -- 15 MR. WONG: Q. Let me ask the question -- 16 A -- word in the command? 17 Q Yes. 18 Let me ask a clean question. 19 The use of the word PTP in all five of the 20 commands that are associated with you in Exhibit 92 -- 21 A Right. 22 Q -- that word came from the PTP IEEE standard 23 that was marked as Exhibit 93; correct? 24 MR. PAK: Same objections. 25 THE WITNESS: Yes, it means the same.</p> <p style="text-align: right;">Page 138</p>	<p>1 the priority 1 attribute in the IEEE standard marked 2 as Exhibit 93? 3 MR. PAK: Objection; vague. 4 THE WITNESS: Yes. I think I chose it for 5 the intention to mean the priority 1 attribute of the 6 clock. 7 MR. WONG: Q. And is your answer the same 8 for the command "PTP priority 2"? 9 Is the priority 2 command parameter -- does 10 that refer to the priority 2 attribute in the IEEE 11 standard marked as Exhibit 93? 12 MR. PAK: Same objection. 13 THE WITNESS: It's referring to the same -- 14 that attribute, yes. 15 MR. WONG: Q. That attribute in the IEEE 16 standard? 17 A In the IEEE standard, yes. 18 Q Okay. And you knew about the priority 1 and 19 priority 2 attributes in the IEEE standard before you 20 started adding the "PTP priority 1" and "PTP 21 priority 2" commands to the iOS software; correct? 22 A Yes, I read the spec. 23 Q And you were aware of those two particular 24 attributes before you started adding the "PTP 25 priority 1" and "PTP priority 2" commands to Cisco's</p> <p style="text-align: right;">Page 140</p>
<p>1 MR. WONG: Okay. 2 Q And you -- in describing the function 3 performed by the "PTP priority 1" command, you 4 testified that it configures the priority 1 parameter 5 for the PTP clock; correct? 6 A Yes. 7 Q And the priority 1 parameter for the PTP 8 clock, that's the same priority 1 parameter that we 9 discussed in Exhibit 93; correct? 10 A When you say "parameter," I think they are a 11 little different in the CLI and the spec. 12 Q How are they different? 13 A The -- in the spec, it's the attribute of the 14 clock; right? When I say parameter, I mean the -- in 15 the context of the CLI command is a parameter. 16 Q Oh, I see. 17 So -- so the word priority 1 in the "PTP 18 priority 1" CLI command is a parameter of the command? 19 A Yes. 20 Q That's what you mean by -- 21 A Right. 22 Q -- parameter? 23 A Right. 24 Q Okay. Now, does the priority 1 parameter in 25 the CLI command "PTP priority 1," does that refer to</p> <p style="text-align: right;">Page 139</p>	<p>1 routing software; right? 2 A Yes. 3 Q How long did it take you to come up with the 4 "PTP priority 1" command? 5 A I don't remember how long it took for me to 6 come up with the list of CLI commands. 7 Q Okay. I'm just asking about the -- the one 8 command, "PTP priority 1." 9 A Right. 10 Q Did -- did that take you an hour to come up 11 with that command? 12 MR. PAK: Objection; vague. 13 THE WITNESS: You mean just to decide on the 14 syntax of the command? 15 MR. WONG: On the two words in the command. 16 That's right. 17 Q How long did it take you to decide on the 18 two words, "PTP priority 1," in that command? 19 A I don't remember. 20 Q Did it take you more than a day? 21 MR. PAK: Objection; vague. 22 THE WITNESS: Maybe not. I don't recall the 23 details of -- of this level. 24 MR. WONG: Okay. 25 Q Do you --</p> <p style="text-align: right;">Page 141</p>

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<p>1 understanding?</p> <p>2 A Yes.</p> <p>3 There -- so, when the CLI command is</p> <p>4 received, something needs to happen based on what has</p> <p>5 been configured as being specified as the parameter.</p> <p>6 So that's the interface I was referring to, that I</p> <p>7 hook up to the back-end behavior of the clock.</p> <p>8 Q And the back-end behavior for each command</p> <p>9 that you are associated with in Exhibit 92, did you</p> <p>10 write that source code?</p> <p>11 A I did write the source code.</p> <p>12 Q Did you have anyone else's help in writing</p> <p>13 the source code for those five commands associated</p> <p>14 with you in Exhibit 92?</p> <p>15 A No. I wrote all of them.</p> <p>16 Q The "PTP sync interval" command --</p> <p>17 A Yes.</p> <p>18 Q Well, actually, just for clarity, what</p> <p>19 function does the "PTP priority 2" command perform?</p> <p>20 A It configures another parameter which helps</p> <p>21 to determine the -- the clock.</p> <p>22 Q And that other parameter you're talking about</p> <p>23 is the priority 2 attribute that is defined by the</p> <p>24 IEEE standard marked as Exhibit 93; correct?</p> <p>25 A Yes.</p> <p style="text-align: right;">Page 146</p>	<p>1 command?</p> <p>2 MR. WONG: Q. When you --</p> <p>3 A When I -- when I chose to use priority 1;</p> <p>4 right?</p> <p>5 Q Yes, that's what I'm asking.</p> <p>6 A Yes. When I chose the word, I meant to</p> <p>7 configure this attribute for the clock. That was</p> <p>8 true.</p> <p>9 Q And this attribute for the clock, you're</p> <p>10 referring to the priority 1 attribute that's defined</p> <p>11 in the IEEE standard; right?</p> <p>12 A Yes.</p> <p>13 Q And your answer is the same for the</p> <p>14 priority 2 attribute defined in the IEEE standard,</p> <p>15 correct, with respect to the PTP priority 2 command?</p> <p>16 A Yes.</p> <p>17 Q And you chose the words sync interval because</p> <p>18 the IEEE standard marked as Exhibit 93 described --</p> <p>19 strike that.</p> <p>20 You chose the words sync interval because the</p> <p>21 IEEE standard marked as Exhibit 93 also used the term</p> <p>22 sync interval; correct?</p> <p>23 MR. PAK: Objection; vague.</p> <p>24 THE WITNESS: When you say that, it makes me</p> <p>25 feel that you -- it's a direct translate from the spec</p> <p style="text-align: right;">Page 148</p>
<p>1 Q Okay. What function does the "PTP sync</p> <p>2 interval" command perform?</p> <p>3 A It configures how often the clock syncs with</p> <p>4 the master.</p> <p>5 Q And do you recall earlier we were looking at</p> <p>6 the IEEE standard marked Exhibit 93 and a term called</p> <p>7 sync interval in there?</p> <p>8 A Right.</p> <p>9 Q Is the sync interval, that the "PTP sync</p> <p>10 interval" command refers to, the same sync interval</p> <p>11 that we discussed in Exhibit 93?</p> <p>12 MR. PAK: Objection; vague.</p> <p>13 THE WITNESS: I think that was -- was defined to be used to</p> <p>14 command was used -- was defined to be used to</p> <p>15 configure that part of the clock.</p> <p>16 MR. WONG: Right.</p> <p>17 Q And by "that part of the clock," you mean the</p> <p>18 sync interval attribute defined by the IEEE PTP</p> <p>19 standard; right?</p> <p>20 A Yes.</p> <p>21 Q Now, you chose the term priority 1 because</p> <p>22 priority 1 is an attribute that's in the IEEE</p> <p>23 standard; right?</p> <p>24 MR. PAK: Objection; vague.</p> <p>25 THE WITNESS: You mean when I wrote the</p> <p style="text-align: right;">Page 147</p>	<p>1 to the command.</p> <p>2 Is that what you mean --</p> <p>3 MR. WONG: No, no. I'm --</p> <p>4 THE WITNESS: -- when you ask the question?</p> <p>5 MR. WONG: No, no.</p> <p>6 Q My question is simply: When you -- you</p> <p>7 testified that the -- one second.</p> <p>8 Can you tell me again what the function is</p> <p>9 that the "PTP sync interval" performs.</p> <p>10 A It configures or determines how often the</p> <p>11 clock syncs with the master clock.</p> <p>12 Q And that functionality is described in the</p> <p>13 IEEE standard; correct?</p> <p>14 A Yes.</p> <p>15 Q And the IEEE standard uses the term sync</p> <p>16 interval to describe what you just described as the</p> <p>17 function of the "PTP sync interval" command; right?</p> <p>18 MR. PAK: Objection; vague.</p> <p>19 THE WITNESS: It's the same meaning.</p> <p>20 MR. WONG: Okay.</p> <p>21 Q So you chose the words sync interval for the</p> <p>22 "PTP sync interval" command because the IEEE standard</p> <p>23 used the same term to describe what the command does;</p> <p>24 right?</p> <p>25 MR. PAK: Objection; vague.</p> <p style="text-align: right;">Page 149</p>


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<p>1 THE WITNESS: I chose it based on my 2 understanding of the spec. And so it's -- it's just a 3 preference how -- how to express this -- how -- how to 4 express this parameter in the -- for the user 5 interface. I wouldn't say it's directly, because it's 6 in the spec. That's why I use it. 7 MR. WONG: Q. Well, you wouldn't call -- so 8 the IEEE has a priority 1 attribute; right? 9 A. Right. 10 Q. And it's a requirement of the PTP standard; 11 right? 12 A. Yes. 13 Q. Would you call the priority 1 standard 14 priority 2 in a command if the command sets the 15 priority 1 attribute? 16 MR. PAK: Objection; vague. 17 THE WITNESS: No. I would set it as 18 priority 1. 19 MR. WONG: Right. 20 THE WITNESS: Not priority 2. 21 MR. WONG: Q. And that's because you want 22 the command to match the same term that's used in the 23 standard; right? 24 MR. PAK: Objection; mischaracterizes the 25 witness' testimony.</p> <p style="text-align: right;">Page 150</p>	<p>1 standard attributes; right? 2 MR. PAK: Objection; assumes facts not in 3 evidence; mischaracterizes the witness' testimony. 4 THE WITNESS: I think I chose it based on my 5 understanding of the spec. And I don't remember using 6 it because it's in the spec. 7 MR. WONG: Q. But you had reviewed the spec 8 entirely before you started adding these five commands 9 associated with you in Exhibit 92; correct? 10 A. I did review the spec, yes. 11 Q. So you -- so you were aware that these terms 12 were defined in the IEEE specification marked as 13 Exhibit 93 before you added the five commands 14 associated with you in Exhibit 92; right? 15 MR. PAK: Objection; vague. 16 THE WITNESS: When you say "five commands," 17 that would include the show command which are 18 different, right, than these configuration commands? 19 MR. WONG: Sure. 20 Q. Why don't we just limit the question then to 21 the three commands that we just were talking about: 22 "PTP priority 1" -- 23 A. Right. 24 Q. -- "PTP priority 2," and "PTP sync interval." 25 A. Right.</p> <p style="text-align: right;">Page 152</p>
<p>1 MR. WONG: Let me rephrase the question. 2 Q. For a command "PTP priority 1" that sets an 3 attribute that's called priority 1 in the spec, you 4 should use the same word in the command; correct? 5 MR. PAK: Objection; assumes facts not in 6 evidence. 7 THE WITNESS: No, I don't think that part was 8 true. 9 For example, you could use clock priority 1 10 or clock priority 2; right? There -- there is no 11 direct association of what I use in the command line 12 CLI that it has to match this spec. That's the -- 13 that -- they are not equal. 14 MR. WONG: Okay. 15 Q. Well, priority 1 has a particular meaning in 16 the PTP context; correct? 17 A. Yes. 18 Q. And the "PTP priority 1" command performs the 19 function in the PTP context; correct? 20 MR. PAK: Objection; vague; incomplete 21 hypothetical. 22 THE WITNESS: The -- yes, priority attribute 23 is an important part of a PTP clock. 24 MR. WONG: Q. And you chose commands that 25 would be clear to a user trying to set these industry</p> <p style="text-align: right;">Page 151</p>	<p>1 Q. You were aware that the terms priority 1, 2 priority 2, sync interval, and PTP were defined in the 3 IEEE specification marked as Exhibit 93 before you 4 added those three commands to Cisco's routing 5 software; correct? 6 A. I'm aware of those terms being defined in the 7 1588 standard. 8 Q. Okay. Before you added those three commands 9 to the Cisco software; correct? 10 A. Yes. 11 Q. Okay. Now, "show PTP clock" is another 12 command that you're associated with; correct? 13 A. Yes. 14 Q. What's the function performed by the "show 15 PTP clock" command? 16 A. It shows the state and status of the clock. 17 And I don't recall the entire output from the command, 18 but I think that's probably summarize majority of the 19 output. 20 Q. Okay. And as we discussed earlier in today's 21 deposition, the PTP IEEE specification defines the 22 term clock; correct? 23 A. It defined the term clock, yes. 24 Q. Okay. And the clock that is referred to in 25 the command "show PTP clock" is the clock that is</p> <p style="text-align: right;">Page 153</p>

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<p>1 defined in the PTP standard; correct?</p> <p>2 MR. PAK: Objection; vague.</p> <p>3 THE WITNESS: Well, the command shows the PTP</p> <p>4 clock status.</p> <p>5 MR. WONG: Q. And when you refer to "the PTP</p> <p>6 clock" in that response you just gave, you're</p> <p>7 referring to the clock that is defined in the PTP</p> <p>8 standard; correct?</p> <p>9 A Yes, it means the clock.</p> <p>10 Q Now, the -- the word "show" in that command,</p> <p>11 were there other commands in iOS that used the word</p> <p>12 "show" before you added this "show PTP clock" command</p> <p>13 to the software?</p> <p>14 A Yes.</p> <p>15 Q Okay. You were familiar that other commands</p> <p>16 used the first word of "show" to display information</p> <p>17 before you added the "show PTP clock" command;</p> <p>18 correct?</p> <p>19 A Yes.</p> <p>20 Q Okay. So you -- you simply followed what</p> <p>21 other commands were doing when you chose the word</p> <p>22 "show" in "show PTP clock"; is that right?</p> <p>23 MR. PAK: Objection; assumes facts not in</p> <p>24 evidence; mischaracterizes the witness' testimony.</p> <p>25 MR. WONG: Q. If anything that I'm saying --</p> <p style="text-align: right;">Page 154</p>	<p>1 standards?</p> <p>2 A Yes.</p> <p>3 Q And you recall discussing the definition of</p> <p>4 parent clock in the standards earlier in this</p> <p>5 deposition; correct?</p> <p>6 A Yes.</p> <p>7 Q And another shorthand used by the IEEE</p> <p>8 standard for parent clock is simply parent; correct?</p> <p>9 MR. PAK: Objection; vague.</p> <p>10 THE WITNESS: Can you refer me to that page.</p> <p>11 MR. WONG: Sure, sure, absolutely.</p> <p>12 Q I think it's on page 53 of Exhibit 93. It's</p> <p>13 in that sentence maybe two-thirds of the way down on</p> <p>14 page 53 that starts with:</p> <p>15 "Ordinary and boundary clocks may keep</p> <p>16 statistics."</p> <p>17 A Uh-huh.</p> <p>18 "Using the following attribute."</p> <p>19 Okay.</p> <p>20 Q So you would agree that, in the IEEE</p> <p>21 standard, it uses the term parent as shorthand for</p> <p>22 parent clock?</p> <p>23 A Yes.</p> <p>24 Q Okay. Do you know if commands that use the</p> <p>25 word "show" were used before they were used in Cisco's</p> <p style="text-align: right;">Page 156</p>
<p>1 A "Show" is a --</p> <p>2 Q Sorry.</p> <p>3 A -- big category of commands. Like, there is</p> <p>4 debug. There is config. There is show. So show is</p> <p>5 one big category of commands.</p> <p>6 Q And there was a big -- and that category of</p> <p>7 commands, the show commands, existed before you added</p> <p>8 the "show PTP clock" command to the software; correct?</p> <p>9 A Yes.</p> <p>10 Q And you were just building upon that category</p> <p>11 of commands when you used the word "show" in "show PTP</p> <p>12 clock"; correct?</p> <p>13 MR. PAK: Objection; mischaracterizes the</p> <p>14 witness' testimony.</p> <p>15 THE WITNESS: Yes, I think that -- that was</p> <p>16 the intention.</p> <p>17 MR. WONG: Q. And is the same</p> <p>18 explanation -- does the same explanation apply to</p> <p>19 "show PTP parent" for the show aspect of that command?</p> <p>20 A Yes, for the show aspect of the command, yes.</p> <p>21 Q Okay. What function does the "show PTP</p> <p>22 parent" command perform?</p> <p>23 A It shows the status of the parent clock.</p> <p>24 Q When you say "the parent clock," are you</p> <p>25 referring to the parent clock as defined in the PTP</p> <p style="text-align: right;">Page 155</p>	<p>1 software?</p> <p>2 MR. PAK: Objection; calls for expert</p> <p>3 testimony.</p> <p>4 THE WITNESS: I'm not aware of that.</p> <p>5 MR. WONG: Okay.</p> <p>6 Q I'm just asking whether you personally know.</p> <p>7 If you don't, then --</p> <p>8 A No, I don't.</p> <p>9 Q -- that's fine.</p> <p>10 MR. WONG: What's the next exhibit number?</p> <p>11 THE REPORTER: 98.</p> <p>12 MR. WONG: Okay.</p> <p>13 (Document marked Exhibit 98</p> <p>14 for identification.)</p> <p>15 MR. WONG: The court reporter has marked as</p> <p>16 Exhibit 98 a document bearing control</p> <p>17 Nos. CSI-CLI-00194055 to '194800.</p> <p>18 Q Ms. Liu, do you recognize this document?</p> <p>19 A I don't recognize this document.</p> <p>20 Q Okay. Have you seen Cisco command reference</p> <p>21 guides before?</p> <p>22 A In general terms, right, not particular to</p> <p>23 700 series?</p> <p>24 Q That's -- that's correct, in general terms.</p> <p>25 A Yes, I have.</p> <p style="text-align: right;">Page 157</p>

CONFIDENTIAL PURSUANT TO THE PROTECTIVE ORDER

<p>1 J U R A T</p> <p>2</p> <p>3 I, TONG LIU, do hereby certify under penalty</p> <p>4 of perjury, that I have read the foregoing</p> <p>5 transcript of my deposition in the matter of</p> <p>6 Cisco Systems, Inc., vs. Arista Networks, Inc.,</p> <p>7 taken on January 15, 2016; that I have made such</p> <p>8 corrections as appear noted herein in ink,</p> <p>9 initialed by me; that my testimony as contained</p> <p>10 herein, as corrected, is true and correct.</p> <p>11 DATED this ____ day of _____,</p> <p>12 2015, at _____.</p> <p>13 _____</p> <p>14 SIGNATURE OF WITNESS</p> <p>15</p> <p>16 NOTARIZATION (If Required)</p> <p>17 State of _____</p> <p>18 County of _____</p> <p>19 Subscribed and sworn to (or affirmed) before me on</p> <p>20 this ____ day of _____, 20____,</p> <p>21 by _____, proved to me on the</p> <p>22 basis of satisfactory evidence to be the person who</p> <p>23 appeared before me.</p> <p>24 Signature: _____ (Seal)</p> <p>25</p> <p style="text-align: right;">Page 214</p>	
<p>1 CERTIFICATE OF REPORTER</p> <p>2 I, ANDREA M. IGNACIO, hereby certify that the</p> <p>3 witness in the foregoing deposition was by me duly</p> <p>4 sworn to tell the truth, the whole truth, and nothing</p> <p>5 but the truth in the within-entitled cause;</p> <p>6 That said deposition was taken in shorthand</p> <p>7 by me, a disinterested person, at the time and place</p> <p>8 therein stated, and that the testimony of the said</p> <p>9 witness was thereafter reduced to typewriting, by</p> <p>10 computer, under my direction and supervision;</p> <p>11 That before completion of the deposition,</p> <p>12 review of the transcript [x] was [] was not</p> <p>13 requested. If requested, any changes made by the</p> <p>14 deponent (and provided to the reporter) during the</p> <p>15 period allowed are appended hereto.</p> <p>16 I further certify that I am not of counsel or</p> <p>17 attorney for either or any of the parties to the said</p> <p>18 deposition, nor in any way interested in the event of</p> <p>19 this cause, and that I am not related to any of the</p> <p>20 parties thereto.</p> <p>21 Dated: 01/29/2016</p> <p>22</p> <p>23 </p> <p>24 ANDREA M. IGNACIO,</p> <p>25 RPR, CRR, CCRR, CLR, CSR No. 9830</p> <p style="text-align: right;">Page 215</p>	

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC.,)
)
Plaintiff,)
) Case No.
vs.) 5:14-cv-05344-BLF (PSG)
)
ARISTA NETWORKS, INC.,)
)
Defendant.)
_____)

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VIDEOTAPED DEPOSITION OF KIRK LOUGHEED
Palo Alto, California
Friday, November 20, 2015
Volume I

Reported by:
CARLA SOARES
CSR No. 5908
Job No. 2187110
Pages 1 - 189

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 UNITED STATES DISTRICT COURT 2 NORTHERN DISTRICT OF CALIFORNIA 3 SAN JOSE DIVISION 4 5 CISCO SYSTEMS, INC.,) 6) 7 Plaintiff,) 8) Case No. 9 vs.) 5:14-cv-05344-BLF (PSG) 10) 11 ARISTA NETWORKS, INC.,) 12) 13 Defendant.) 14 _____) 15 16 17 18 19 20 21 22 23 24 25</p> <p>VIDEOTAPED DEPOSITION OF KIRK LOUGHEED, Volume I, taken on behalf of Defendant, at 650 Page Mill Road, Palo Alto, California, beginning at 9:19 a.m., and ending at 6:15 p.m., on Friday, November 20, 2015, before CARLA SOARES, Certified Shorthand Reporter No. 5908.</p>	<p>1 APPEARANCES (Continued): 2 3 For the Defendant: 4 KEKER & VAN NEST LLP 5 BY: BRIAN L. FERRALL, Attorney at Law 6 BY: RYAN WONG, Attorney at Law 7 633 Battery Street 8 San Francisco, California 94111 9 415.391.5400 10 bferrall@kvn.com 11 rwong@kvn.com 12 13 ALSO PRESENT: Sean Grant, Video Operator 14 --o0o-- 15 16 17 18 19 20 21 22 23 24 25</p>
Page 2	Page 4
<p>1 APPEARANCES: 2 3 For the Plaintiff and the Witness: 4 QUINN EMANUEL URQUHART & SULLIVAN, LLP 5 BY: JOHN (JAY) NEUKOM, Attorney at Law 6 50 California Street, 22nd Floor 7 San Francisco, California 94111 8 415.875.6341 9 johnneukom@quinnemanuel.com 10 and 11 KIRKLAND & ELLIS LLP 12 BY: JOSHUA L. SIMMONS, Attorney at Law 13 601 Lexington Avenue 14 New York, New York 10022 15 212-446-4989 16 joshua.simmons@kirkland.com 17 18 19 20 21 22 23 24 25</p>	<p>1 INDEX 2 WITNESS 3 KIRK LOUGHEED EXAMINATION 4 Volume I 5 BY MR. FERRALL 10 6 7 EXHIBITS 8 NUMBER DESCRIPTION PAGE 9 Exhibit 29 Document headed "Internet 73 10 Protocol," 11 Bates ARISTANDCA0031553 - 1601 12 13 Exhibit 30 Document headed "DoD Internet 73 14 Host Table Specification" 15 16 Exhibit 31 Document headed "An Ethernet 73 17 Address Resolution Protocol or 18 Converting Network Protocol 19 Addresses to 48.bit Ethernet 20 Address for Transmission on 21 Ethernet Hardware," 22 Bates ARISTANDCA0003130 - 1639 23 24 25</p>
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1	EXHIBITS		
2	NUMBER	DESCRIPTION	PAGE
3	Exhibit 32	Document headed "Address	85
4		Resolution Protocol (ARP) module	
5		for the Yeager gateway"	
6			
7	Exhibit 33	Email string, top email to Kirk	89
8		Lougheed and Paula Labloner from	
9		Mike Sanchez, dated 11-17-14,	
10		Bates CSI-CLI-01326834 - 6837	
11			
12	Exhibit 34	Email string, top email to Phillip	93
13		Remaker from Kirk Lougheed, dated	
14		3-30-10, Bates CSI-CLI-01317865 -	
15		7866	
16			
17	Exhibit 35	Email string, top email to Joe	100
18		Hielscher from Kirk Lougheed,	
19		dated 7-23-08,	
20		Bates CSI-CLI-01134849 - 4850	
21			
22	Exhibit 36	Document entitled "Stanford	101
23		Ethertip/Gateway User and	
24		Configuration Guide,"	
25		Bates CSI-CLI-01315523 - 5568	
			Page 6

1	EXHIBITS		
2	NUMBER	DESCRIPTION	PAGE
3	Exhibit 37	Document entitled "cisco Systems	106
4		AGS User Manual,"	
5		Bates CSI-CLI-00358166 - 8223	
6			
7	Exhibit 38	Email string, top email to Phillip	122
8		Remaker from Kirk Lougheed, dated	
9		12-11-08, Bates CSI-ANI-00043306 -	
10		3306.000001	
11			
12	Exhibit 39	Document entitled "Cisco's	152
13		Response to Arista's Interrogatory	
14		No. 16 Amended Exhibit D1 (IOS	
15		Release 11.0)"	
16			
17	Exhibit 40	Email to Craig Fox from Kirk	160
18		Lougheed, dated 3-6-96,	
19		Bates CSI-CLI-00746398	
20			
21	Exhibit 41	Document described as source	162
22		code file	
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24	Exhibit 42	Document described as code	177
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3	Exhibit 43	Document entitled "DECbrouter 90	181
4		Products," Bates CSI-ANI-00081683 -	
5		1683.000344	
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<p>1 MR. FERRALL: Let's mark this as the next 15:26:35</p> <p>2 exhibit.</p> <p>3 (Exhibit 38 was marked for identification</p> <p>4 and is attached hereto.)</p> <p>5 BY MR. FERRALL: 15:26:37</p> <p>6 Q Exhibit 38 is a set of emails between you</p> <p>7 and Mr. Remaker, among others. It bears control</p> <p>8 numbers CSI-ANI-00043306.</p> <p>9 A Okay. I'd like to read this.</p> <p>10 Q First let me ask you the question so you 15:27:19</p> <p>11 know what to look for.</p> <p>12 A I will forget the question by the time I'm</p> <p>13 done reading this.</p> <p>14 Q Well, Mr. Lougheed, that's not the way it</p> <p>15 works, actually. I ask the question and you answer 15:27:28</p> <p>16 it.</p> <p>17 A Okay.</p> <p>18 Q If you can't answer it, then you tell me.</p> <p>19 My only question is, did you send the</p> <p>20 email that's at the top of Exhibit 38, the one at 15:27:38</p> <p>21 12-11-2008 at 10:14 p.m.?</p> <p>22 MR. NEUKOM: Mischaracterizes the document</p> <p>23 on its face.</p> <p>24 And I know that Mr. Ferrall would like you</p> <p>25 to feel comfortable to read the page-and-a-half 15:27:54</p> <p style="text-align: right;">Page 122</p>	<p>1 message indicates that you are looking at an error 15:29:49</p> <p>2 message. An ancient operating system called TOPS-20</p> <p>3 used such a convention and I adopted it."</p> <p>4 Do you see that?</p> <p>5 A Yeah, I do see that. 15:29:59</p> <p>6 Q Why did you adopt a TOPS-20 convention?</p> <p>7 A Of the possibilities that I had, that</p> <p>8 seemed -- that seemed a reasonable -- to me, it</p> <p>9 seemed like a reasonable way of doing things.</p> <p>10 Q Did you get permission from Digital 15:30:32</p> <p>11 Equipment Company to use that convention?</p> <p>12 MR. NEUKOM: Objection. Calls for a legal</p> <p>13 conclusion and misstates prior testimony.</p> <p>14 THE WITNESS: No, I did not seek</p> <p>15 permission. 15:30:55</p> <p>16 BY MR. FERRALL:</p> <p>17 Q Have you ever heard of the acronym RIP in</p> <p>18 the context of networking?</p> <p>19 A It typically means routing information</p> <p>20 protocol. 15:31:18</p> <p>21 Q You're familiar with that protocol?</p> <p>22 A It's been a while, but yes, I'm familiar</p> <p>23 with it.</p> <p>24 Q Did you make up the acronym RIP for</p> <p>25 routing information protocol? 15:31:32</p> <p style="text-align: right;">Page 124</p>
<p>1 document that he's just put in front of you before 15:27:57</p> <p>2 answering his question.</p> <p>3 THE WITNESS: Okay. I'll read it.</p> <p>4 MR. FERRALL: Actually, no, I would like</p> <p>5 him to answer the question. 15:28:03</p> <p>6 Q Are you telling me you can't tell me</p> <p>7 whether you sent the email?</p> <p>8 MR. NEUKOM: It's a totally unfair</p> <p>9 question. The email that he sent would necessarily</p> <p>10 include everything that follows. 15:28:10</p> <p>11 If you want him to tell you whether he</p> <p>12 remembers this or whether he sent it, let him read</p> <p>13 the document. Come on, Brian.</p> <p>14 It's a page and a half. We're not talking</p> <p>15 about him wasting 30 minutes to read a product 15:28:20</p> <p>16 manual. It's a page-and-a-half email. The witness</p> <p>17 has said he wants to read it, and we're going to let</p> <p>18 him read it.</p> <p>19 THE WITNESS: Okay. I've read it.</p> <p>20 BY MR. FERRALL: 15:29:28</p> <p>21 Q Okay. Did you send this email that's</p> <p>22 dated December 11, 2008, at 10:14 p.m.?</p> <p>23 A I believe I did.</p> <p>24 Q Okay. And in the last paragraph of that</p> <p>25 email, you write, "The percent sign leading a 15:29:41</p> <p style="text-align: right;">Page 123</p>	<p>1 A No, I did not make up that acronym. 15:31:37</p> <p>2 Q Did you make up the term "routing</p> <p>3 information protocol"?</p> <p>4 A No.</p> <p>5 Q Did you submit an RFC for the routing 15:31:51</p> <p>6 information protocol?</p> <p>7 A No.</p> <p>8 Q Do you know who did?</p> <p>9 A No, I don't know who did.</p> <p>10 Q Did you ever ask permission from the 15:32:25</p> <p>11 person who made up the term "RIP" for permission to</p> <p>12 use it, to use that term?</p> <p>13 MR. NEUKOM: Objection. Foundation,</p> <p>14 vague, and calls for a legal conclusion.</p> <p>15 THE WITNESS: There was no one whose 15:32:50</p> <p>16 permission one could ask.</p> <p>17 BY MR. FERRALL:</p> <p>18 Q Well, I'll tell you, a Mr. Charles Hedrick</p> <p>19 at Rutgers submitted what I believe to be the first</p> <p>20 RFC on the routing information protocol. 15:33:05</p> <p>21 Do you know Mr. Hedrick?</p> <p>22 A I do.</p> <p>23 Q Did you ever ask him for permission to use</p> <p>24 the term "RIP"?</p> <p>25 MR. NEUKOM: Objection. Asked and 15:33:15</p> <p style="text-align: right;">Page 125</p>

32 (Pages 122 - 125)

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1 interface, and it would -- as a packet that was	16:12:12	1 the like, or "database lookup" or...	16:16:59
2 being sent -- sent out that interface, it could		2 BY MR. FERRALL:	
3 either be permitted or denied going through that		3 Q Did you coin the term "domain lookup"?	
4 interface.		4 A I decided to use that as a command	
5 Those were the two original uses of the	16:12:29	5 expression within the software, yes.	16:17:21
6 "access list" command expression.		6 Q I'll ask the question one more time. I'm	
7 Q Do you believe that you coined the term		7 asking you if you coined the term "domain lookup."	
8 "access list"?		8 MR. NEUKOM: Objection. Asked and	
9 A It was my choice to use that description.		9 answered and vague.	
10 Q Well, I'm asking you if you coined that	16:12:56	10 THE WITNESS: I did not.	16:17:43
11 term, or had you ever heard that term before in the		11 BY MR. FERRALL:	
12 context of networking?		12 Q Do you know who did?	
13 MR. NEUKOM: Objection. Vague, compound,		13 A No idea.	
14 asked and answered.		14 Q When was -- to your knowledge, when was	
15 THE WITNESS: I do not believe that I had	16:13:13	15 the term "routing" ever used in conjunction with the	16:18:41
16 heard the term before.		16 Internet protocol?	
17 BY MR. FERRALL:		17 MR. NEUKOM: Objection. Vague and	
18 Q Had you heard the term "IP access group"		18 foundation.	
19 before?		19 THE WITNESS: I don't know when the term	
20 A Yes.	16:13:25	20 "routing" was used.	16:19:05
21 Q Who coined that term, to your knowledge,		21 BY MR. FERRALL:	
22 do you know?		22 Q Were people in the field talking about	
23 A I did.		23 routing in connection with IP before you joined	
24 Q Under what circumstances? Or for what		24 Cisco?	
25 purpose, I should say?	16:13:39	25 MR. NEUKOM: Objection. Vague, compound.	16:19:24
Page 142		Page 144	
1 A I don't remember the exact details, but it	16:13:52	1 THE WITNESS: Yes.	16:19:27
2 is -- either assigns an access list to an interface		2 BY MR. FERRALL:	
3 or -- I think it assigns an interface to a -- an		3 Q Tell me what, if anything, was creative	
4 access list to an interface. I believe it's access		4 about your decision to use the term "IP routing" as	
5 class or something like that that assigns it to an	16:14:07	5 a CLI command.	16:19:51
6 interface or to a line number.		6 MR. NEUKOM: Objection. Calls for opinion	
7 Q The term "domain name" is not a term that		7 testimony.	
8 you made up, is it?		8 THE WITNESS: At Stanford where we had	
9 A No, I didn't make -- I -- no, I did not.		9 terminal servers and gateways in the same software,	
10 Q "Domain name" is a term that goes back to	16:15:38	10 there were times when it was convenient -- just	16:20:26
11 the ARPANET, actually. Are you aware of that?		11 because something had multiple interfaces, it could	
12 MR. NEUKOM: Objection. Foundation.		12 still perhaps be a terminal server. So I needed a	
13 THE WITNESS: I would be unsurprised if it		13 way of turning off, disabling routing functionality.	
14 went back that far.		14 And I used the command -- I chose the	
15 Are you referring to ARPANET protocols or	16:16:02	15 keyword -- configuration keyword command expression	16:21:07
16 ARPANET network?		16 "routing." Then "no routing" would turn off routing	
17 BY MR. FERRALL:		17 functionality in whatever software was running at	
18 Q The ARPANET network.		18 the time despite its hardware configuration.	
19 A I believe the concept was introduced while		19 And then later on at Cisco, to keep the --	
20 the ARPANET network was still running.	16:16:15	20 keep the form of the hierarchy of commands, we added	16:21:35
21 Q What about the words "domain lookup"? Did		21 the -- we added our choice of -- we added "IP" in	
22 you coin that term "domain lookup"?		22 front of it because you could potentially turn off	
23 MR. NEUKOM: Objection. Vague.		23 other sorts of routing, or at least that was the --	
24 THE WITNESS: It's a parallel construction		24 that was the -- that was a possibility for other	
25 to terms like "address lookup" or "host lookup" or	16:16:52	25 network protocols.	16:22:02
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1 BY MR. FERRALL: 17:55:19	1 interior routing protocols. And customer networks, 17:59:19
2 Q Mr. Lougheed, this is a document that	2 especially in the early days when they were attached
3 appears to be your work, according to the copyright	3 to the -- they had campus networks running one
4 notice on the front.	4 routing protocol, they'd be attached to the NSFNET
5 Do you see that? 17:55:29	5 backbone as well running a different routing 17:59:39
6 A Yes, I see that.	6 protocol.
7 Q Okay. Do you know when -- do you	7 And since routing protocols would give
8 recognize it?	8 incommensurate metrics, metrics that could not be
9 A Yes, I do.	9 compared, I developed a concept of distance that
10 Q What is it? 17:55:36	10 says if one routing protocol says it knows a route 18:00:08
11 A It's a file called "globs.h." It is	11 to one destination and another routing protocol says
12 declaring a set of variables that are used in the	12 it knows a route to that same destination, which --
13 software.	13 the routing protocol with the smallest
14 Q And when did you compose what's	14 administrative distance would be the one that would
15 Exhibit 42? 17:56:02	15 be entered into the routing table. 18:00:24
16 A Is there a question?	16 And so that was the problem, and my
17 Q Yes. I asked when did you compose	17 solution was the administrative distance mechanism
18 Exhibit 42?	18 that I described.
19 A Apparently June of 1985.	19 And when I implemented BGP, that was a
20 Q And you were employed by Stanford at that 17:56:28	20 natural extension to include for BGP as well to be 18:00:49
21 time, right?	21 able to configure an administrative distance to
22 A Correct.	22 determine the believability of BGP.
23 Q We had talked earlier about the ARP,	23 If no routing protocol -- if only one
24 address resolution protocol.	24 routing protocol knew the destination, you would
25 Do you remember that? 17:56:57	25 believe that. If there are two or more, 18:01:10
Page 178	Page 180
1 A Yes. 17:56:58	1 administrative distance was the tie-breaker. 18:01:16
2 Q Okay.	2 Q Sorry. I'm going to jump back to ARP.
3 A I remember you asked questions about that.	3 There's a term you use associated with
4 Q Are you familiar with there being a	4 ARP, "ARP cache." We talked about that earlier in
5 provision for time-outs in the ARP protocol? 17:57:15	5 looking at one of the "clear" commands, right? 18:01:52
6 MR. NEUKOM: Objection. Vague and	6 Where did the term "ARP cache" come from?
7 compound.	7 A The cache is a -- logically a list of
8 THE WITNESS: There is the -- ARP entries	8 items. An ARP cache would be a list of ARP requests
9 can become stale. If you unplug the computer or you	9 that have been satisfied, including their MAC
10 move the computer somewhere else or you replace the 17:57:43	10 addresses and how long since the last time we'd seen 18:02:37
11 network interface, entries will become stale.	11 a -- the router had seen an ARP request go by for
12 Implementing a time-out is a way of making sure the	12 that particular source address.
13 cache isn't stale.	13 That sort of computer science concept of a
14 BY MR. FERRALL:	14 cache is found all over.
15 Q Are you aware of there being a provision 17:58:10	15 Q One of the commands that is indicated that 18:03:14
16 for time-outs in the RFC for ARP?	16 you authored is the command "boot system."
17 MR. NEUKOM: Objection. Vague and	17 Had you ever heard someone use the words
18 compound, asked and answered.	18 "boot system" together before you joined Cisco?
19 THE WITNESS: I'm not -- I don't remember	19 MR. NEUKOM: Objection. Vague.
20 such language right now. 17:58:38	20 THE WITNESS: I had heard phrases like 18:03:45
21 BY MR. FERRALL:	21 "boot the system up," "reboot the system," "reload
22 Q Did you create the term "distance BGP"?	22 the system," "start the system," "restart the
23 A Yes.	23 system."
24 Q How did you come up with that term?	24 (Exhibit 43 was marked for identification
25 A The Cisco IOS started supporting multiple 17:59:11	25 and is attached hereto.) 16:48:10
Page 179	Page 181

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<p>1 Q How did you choose the term -- the words 18:13:39</p> <p>2 "timers basic" for this function?</p> <p>3 A I don't remember where "basic" came from.</p> <p>4 But using the keyword "timers" was my -- was my</p> <p>5 introduction, was my creation. 18:14:00</p> <p>6 MR. NEUKOM: Counsel, I believe we're now</p> <p>7 beyond seven hours.</p> <p>8 MR. FERRALL: Okay. Well, I -- given</p> <p>9 Mr. Lougheed's tenure at Cisco, I thank him for his</p> <p>10 time, but I will say I think we deserve some more 18:14:22</p> <p>11 time with him.</p> <p>12 But I understand seven hours is up and</p> <p>13 you're going to say enough is enough for today I</p> <p>14 take it; is that right?</p> <p>15 MR. NEUKOM: Certainly for today for the 18:14:31</p> <p>16 sake of the witness. And we will respectfully</p> <p>17 disagree with the idea that counsel needs more than</p> <p>18 seven hours --</p> <p>19 MR. FERRALL: Okay.</p> <p>20 MR. NEUKOM: -- needs more than today. 18:14:41</p> <p>21 But we can discuss that for another day.</p> <p>22 In the meantime, I should note for the</p> <p>23 record the witness reserves the right to review the</p> <p>24 transcript and make corrections.</p> <p>25 Brian, I'm not sure I did that for 18:14:51</p> <p style="text-align: right;">Page 186</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8 I, KIRK LOUGHEED, do hereby declare under</p> <p>9 penalty of perjury that I have read the foregoing</p> <p>10 transcript; that I have made any corrections as</p> <p>11 appear noted, in ink, initialed by me, or attached</p> <p>12 hereto; that my testimony as contained herein, as</p> <p>13 corrected, is true and correct.</p> <p>14 EXECUTED this _____ day of _____,</p> <p>15 2015, at _____,</p> <p>16 (City) (State)</p> <p>17</p> <p>18</p> <p>19 _____</p> <p>20 KIRK LOUGHEED</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 188</p>
<p>1 Mr. Tjong. If you're okay with it, I'd like to just 18:14:53</p> <p>2 do a stipulation across the case that both sides</p> <p>3 have the 30-day review and errata right for all</p> <p>4 transcripts regardless whether counsel puts it on</p> <p>5 the record at the depo as a two-way street. 18:15:04</p> <p>6 MR. FERRALL: That's fine. I thought it</p> <p>7 existed as a matter of procedure anyway. So that's</p> <p>8 fine.</p> <p>9 MR. NEUKOM: I hope you're right, but glad</p> <p>10 to have the stipulation, even if it's unnecessary. 18:15:17</p> <p>11 MR. FERRALL: Okay.</p> <p>12 MR. NEUKOM: Thanks very much.</p> <p>13 THE VIDEO OPERATOR: This concludes</p> <p>14 today's videotaped deposition of Mr. Kirk Lougheed.</p> <p>15 We're off the record at 6:15 p.m. Thank you. 18:15:25</p> <p>16 (TIME NOTED: 6:15 p.m.)</p> <p>17 --o0o--</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 187</p>	<p>1 I, the undersigned, a Certified Shorthand</p> <p>2 Reporter of the State of California, do hereby</p> <p>3 certify:</p> <p>4 That the foregoing proceedings were taken</p> <p>5 before me at the time and place herein set forth;</p> <p>6 that any witnesses in the foregoing proceedings,</p> <p>7 prior to testifying, were administered an oath; that</p> <p>8 a record of the proceedings was made by me using</p> <p>9 machine shorthand which was thereafter transcribed</p> <p>10 under my direction; that the foregoing transcript is</p> <p>11 a true record of the testimony given.</p> <p>12 Further, that if the foregoing pertains to</p> <p>13 the original transcript of a deposition in a Federal</p> <p>14 Case, before completion of the proceedings, review</p> <p>15 of the transcript [X] was [] was not requested.</p> <p>16 I further certify I am neither financially</p> <p>17 interested in the action nor a relative or employee</p> <p>18 of any attorney or any party to this action.</p> <p>19 IN WITNESS WHEREOF, I have this date</p> <p>20 subscribed my name.</p> <p>21</p> <p>22 Dated: 11/25/2015</p> <p>23</p> <p>24 <i>Carla Soares</i></p> <p>25 CARLA SOARES</p> <p style="text-align: right;">CSR No. 5908</p> <p style="text-align: right;">Page 189</p>

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC. Case No.: 5:14-cv-05344-BLF (PSG)

Plaintiff,

v.

ARISTA NETWORKS, INC.

Defendants.

* HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY *

VIDEOTAPED DEPOSITION OF KIRK LOUGHEED

Palo Alto, California

Monday, April 4, 2016

Volume 2

Reported by:

LESLIE JOHNSON

RPR, CSR No. 11451

Job No.: 2285024

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4	4 KIRK LOUGHEED
5 CISCO SYSTEMS, INC. Case No.: 5:14-cv-05344-BLF(PSG)	Volume 2
6 Plaintiff,	5
7 v.	6 BY MR. WONG 197
8 ARISTA NETWORKS, INC.	7
9 Defendants.	8 EXHIBITS
10	9 KIRK LOUGHEED
11	10 NUMBER DESCRIPTION PAGE
12	11 Exhibit 452 Copy of name badge; 1 page 198
13	12 Exhibit 453 Black and white copy of photograph; 198
14 * HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY *	1 page
15	13 Exhibit 454 Patent Agreement; Bates stamped 208
16	14 KL-00000872 to 891
17 VIDEOTAPED DEPOSITION OF KIRK LOUGHEED, Volume 2,	15 Exhibit 455 A Multiple Protocol Kernel for 228
18 taken on behalf of Defendant, at 601 California Avenue,	Local Area Network Software
19 Palo Alto, California, beginning at 9:25 a.m. and ending	16 Development Reference Manual; Bates
20 at 4:37 p.m., on Monday, April 4, 2016, before	stamped KL-00000001 to 93
21 LESLIE JOHNSON, Certified Shorthand Reporter No. 11451.	17 Exhibit 456 Document entitled "Chaosnet"; Bates 238
22	stamped KL-00000186 to 250
23	18 Exhibit 457 Document entitled "Debugging 241
24	Information"; Bates stamped
25	KL-00000564-654
	20 Exhibit 458 DECnet Digital Network Architecture 244
	(Phase V); Bates stamped
	KL-00000251 to 380
	22 Exhibit 459 E-mail from Stanford Low Overhead 252
	Timesharing; Bates stamped
	KL-00001699 to 763
	24
	25
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1 APPEARANCES:	1 EXHIBITS (Cont.)
2	2 KIRK LOUGHEED
3 FOR PLAINTIFF CISCO SYSTEMS, INC.:	3 NUMBER DESCRIPTION PAGE
4 QUINN EMANUEL URQUHART & SULLIVAN LLP	4 Exhibit 460 E-mail dated 10-Jan-83 from Barb 260
5 BY: JOHN (JAY) NEUKOM, ESQ.	at ISL to Computer Committee; Bates
6 50 California Street, 22nd Floor	stamped KL-00000868 to 871
7 San Francisco, California 94111	5 Exhibit 461 Stanford Ethernit/Gateway User and 263
8 (415)875-6600	Configuration Guide; Bates stamped
9 johnneukom@quinnemanuel.com	CSI-CLI-01315367 to 97
10 FOR DEFENDANT ARISTA NETWORKS, INC.:	7 Exhibit 462 Letter dated August 21, 1986 from 281
11 KEKER & VAN NEST LLP	Robert L. Street to Len Bosack;
12 BY: RYAN WONG, ESQ.	Bates stamped CSI-CLI-01839502
13 633 Battery Street	to 504
14 San Francisco, California 94111	10 Exhibit 463 E-mail dated 4/3/2006 from Kirk 298
15 (415)391-5400	Lougheed to Vivian Neou; Bates
16 rwong@kvn.com	stamped CSI-CLI-01124245
17 ALSO PRESENT:	12 Exhibit 464 Cisco's Amended Exhibit F; 44 pages 302
18 SEAN GRANT, Videographer	13 Exhibit 465 Software Unit External Functional 310
19	Specification; Bates stamped
20	CSI-CLI-00608751 to 752
21	15 Exhibit 466 ipsupport.c -- miscellaneous IP 328
22	support code; 20 pages
23	17 Exhibit 467 Document entitled "Part 3: Media 332
24	Access Control (MAC) Bridges";
25	Bates stamped ARISTANDCA00032440
	to 812
	19 Exhibit 468 Contents of "tip" directory; 1 page 348
	20 Exhibit 469 Command!c -- ASM/AGS commands; 355
	Bates stamped KL-SC-00000001 to 9
	22 Exhibit 470 Config.c -- parse and act upon 358
	configuration commands; Bates
	stamped KL-SC-00000010 to 20
	24 Exhibit 471 Exec.c -- ASM/AGS command level; 365
	Bates stamped KL-SC-00000021 to 32
	25
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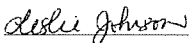
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1	EXHIBITS (Cont.)	1	THE VIDEOGRAPHER: Thank you. Will the
2	KIRK LOUGHEED	2	certified court reporter please swear in the
3	NUMBER DESCRIPTION PAGE	3	witness.
4	Exhibit 472 "cisco.c" source code; 1 page 371	4	
5	Exhibit 473 "stanford.c" source code; 1 page 371	5	KIRK LOUGHEED,
6	Exhibit 474 Source code; Bates stamped 375	6	having been administered an oath, was examined and
7	KL-SC-00000033 to 41	7	testified as follows:
8	Exhibit 475 Source code; Bates stamped 375	8	
9	KL-SC-00000042 to 52	9	EXAMINATION (RESUMED)
10	Exhibit 476 Cisco Systems ASM/AGS User Manual 383	10	BY MR. WONG:
11	and Configuration Guide; Bates	11	Q. Good morning, Mr. Lougheed.
12	stamped CSI-CLI-00358622 to 54	12	A. Good morning.
13	***	13	Q. Mr. Lougheed, do you understand that this
14		14	is a continuation of your personal deposition that
15		15	was taken back on November 20th, 2015?
16		16	A. I do.
17		17	Q. And do you understand that you are still
18		18	testifying under oath as if you were testifying at
19		19	trial?
20		20	A. I do.
21		21	Q. And is there any reason why you cannot
22		22	give full and truthful testimony today?
23		23	A. There is no reason.
24		24	Q. And are you generally still familiar with
25		25	the ground rules for a deposition?
	Page 195		Page 197
1	Palo Alto, California, Monday, April 4, 2016	1	A. Yes.
2	9:25 a.m.	2	Q. Okay. Well, I'll just repeat some of the
3		3	more important rules. If you need to take a break
4	THE VIDEOGRAPHER: Good morning. We're on	4	at any time, just let me know. And all I'd ask is
5	the record. The time is 9:25 a.m., and the date is	5	that if there is a question pending, that you answer
6	April 4th, 2016. This begins Volume 2 of the	6	it before we go on the break. Okay?
7	videotaped deposition of Mr. Kirk Lougheed. My name	7	A. (Witness nods head.)
8	is Sean Grant, here with our court reporter, Leslie	8	MR. WONG: Why don't we mark this as the
9	Johnson. We're here from Veritext Legal Solutions	9	first exhibit for today.
10	at the request of counsel for Defendant. This	10	(Exhibit 452 marked for identification.)
11	deposition is being held at Wilson Sonsini in Palo	11	MR. WONG: And we will mark this one as
12	Alto, California. The caption of this case is	12	the next exhibit.
13	"Cisco Systems Inc. versus Arista Networks Inc.,"	13	(Exhibit 453 marked for identification.)
14	Case No. 5:14-cv-05344-BLF.	14	MR. NEUKOM: Ryan, I have two separate
15	Please note that audio and video recording	15	pieces of paper. Are you treating these as two
16	will take place unless all parties have agreed to go	16	separate exhibits?
17	off the record. Microphones are sensitive and may	17	MR. WONG: Yes. I'm going to give them
18	pick up whispers, private conversations or cellular	18	two exhibit numbers and read them into the record in
19	interference.	19	just a second.
20	At this time, will counsel please identify	20	The court reporter has marked as
21	themselves and state whom they represent.	21	Exhibit 452 a photocopy -- photo bearing Bates Nos.
22	MR. WONG: Ryan Wong from Keker & Van Nest	22	KL-00002202. The court reporter has also marked as
23	for Defendant Arista Networks.	23	Exhibit 453, a black and white photo with Bates Nos.
24	MR. NEUKOM: John Neukom for the plaintiff	24	KL-00002201.
25	and also today for the witness.	25	////
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<p>1 source code for the original "ip access-group" 2 command? 3 A. So writing it for that command would have 4 been part of writing the entire functionality of 5 putting access lists onto interfaces, I guess on the 6 order of a day. 7 Q. If you turn to page 20 on Exhibit 464. 8 Let me know when you're there. 9 A. Okay. I'm on page 20. 10 Q. The second to the top command is 11 "mac-address." 12 Do you see that? 13 A. Uh-huh. 14 Q. Are you the originator of the 15 "mac-address" command? 16 A. Yes. 17 Q. How do you know that you're the originator 18 of the "mac-address" command? 19 A. I remember the problem that I was solving 20 that I needed that sort of functionality. 21 Q. What was the problem that you were trying 22 to solve by the "mac-address" command? 23 A. I needed to send packets on a serial line 24 that actually -- which a serial line does not have 25 MAC addresses, but I needed to somehow get a MAC</p> <p style="text-align: right;">Page 319</p>	<p>1 But to your knowledge, MAC is an 2 industry-standard term defined either on OSI or the 3 IEEE? 4 MR. NEUKOM: Objection. Vague. Calls for 5 opinion. 6 BY MR. WONG: 7 Q. Correct? 8 A. I believe at least IEEE has used the term 9 "MAC address." 10 Q. And at the time that you added the 11 "mac-address" command to Cisco IOS, had the IEEE, to 12 your knowledge, already started using the term "MAC 13 address"? 14 A. Yes. 15 Q. How long did it take you -- strike that. 16 How long did it take you to come up with 17 the syntax for the "mac-address" command? 18 A. I don't remember how long. I suspect it 19 was less than a day. 20 Q. Why do you say that? 21 A. I tend to make decisions quickly. 22 Q. How long did it take you to write the 23 source code for the functionality associated with 24 the "mac-address" command? 25 A. It was probably the same day.</p> <p style="text-align: right;">Page 321</p>
<p>1 address associated with that particular serial line. 2 Q. Was that related to a client request? 3 A. Yes. I don't remember the exact customer 4 or the details to it. 5 Q. Do you remember if the customer suggested 6 you calling the command "mac-address"? 7 A. I don't remember if the customer suggested 8 anything in that particular -- in that particular 9 instance. 10 Q. And is the function of the "mac-address" 11 command to associate a MAC address with a particular 12 serial line? 13 A. It could be a serial line. It could be 14 actually any interface. It would depend what 15 protocols are running across the interface as to 16 what it would do. 17 Q. And what is -- strike that. 18 The MAC part of the words "mac-address," 19 that refers to media access control, correct? 20 A. Yes. 21 Q. And we talked about that media access 22 control being a layer defined by OSI, correct? 23 A. I think we were wondering whether it was 24 OSI or IEEE. 25 Q. Thank you.</p> <p style="text-align: right;">Page 320</p>	<p>1 Q. Did you ever consider a command syntax 2 without the hyphen between "mac" and "address"? 3 A. Stylistically, I prefer dashes as opposed 4 to cramming the words together. I like commands 5 that have an English-like flavor to them. And I 6 detest periods in commands and underscores. So this 7 was . . . 8 Q. Did you ever consider two -- let me strike 9 that. 10 Do you know what a token is in the context 11 of a command? 12 A. Yes. 13 Q. Did you ever consider a command syntax of 14 "mac address"? 15 A. I don't recall if I did. 16 Q. What impact would it have, if any, on the 17 user if -- strike that. 18 Would the CLI behave differently if the 19 command was "mac address," as opposed to 20 "mac-address"? 21 MR. NEUKOM: Objection. Hypothetical 22 question. 23 THE WITNESS: Well, it behaves differently 24 in that instead of one token, there's two tokens. 25 So there would be that.</p> <p style="text-align: right;">Page 322</p>

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<p>1 REPORTER'S CERTIFICATION</p> <p>2 I, Leslie Johnson, a Certified Shorthand</p> <p>3 Reporter of the State of California, do hereby certify:</p> <p>4 That the foregoing proceedings were taken</p> <p>5 before me at the time and place herein set forth; that</p> <p>6 any witnesses in the foregoing proceedings, prior to</p> <p>7 testifying, were administered an oath; that a record of</p> <p>8 the proceedings was made by me using machine shorthand</p> <p>9 which was thereafter transcribed under my direction;</p> <p>10 that the foregoing transcript is a true record of the</p> <p>11 testimony given.</p> <p>12 Further, that if the foregoing pertains to</p> <p>13 the original transcript of a deposition in a Federal</p> <p>14 Case, before completion of the proceedings, review</p> <p>15 of the transcript [] was [] was not requested.</p> <p>16 I further certify I am neither financially interested in</p> <p>17 the action nor a relative or employee of any attorney or</p> <p>18 any party to this action.</p> <p>19 IN WITNESS WHEREOF, I have this date</p> <p>20 subscribed my name.</p> <p>21 Dated: April 19, 2016</p> <p>22</p> <p>23 </p> <p>24 LESLIE JOHNSON</p> <p>25 CSR No. 11451, RPR, CCRR</p> <p>Page 399</p>	

CONFIDENTIAL

1 UNITED STATES DISTRICT COURT
2 FOR THE NORTHERN DISTRICT OF CALIFORNIA
3
4

5 _____
6 CISCO SYSTEMS, INC.,)
7 Plaintiff,)
8 vs.) Civil Action No.:
9 ARISTA NETWORKS, INC.,) 5:14-cv-05344-BLF (PSG)
10 Defendant.)
11 _____)

12 CONFIDENTIAL

13
14 VIDEOTAPED DEPOSITION OF DEVADAS PATIL
15 Palo Alto, California
16 Sunday, February 21, 2016
17 Volume 1
18
19
20

21 Reported by:

22 RACHEL FERRIER, CSR No. 6948

23 Job No. 2223126
24

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9 Defendant.)	9
10	10
11	11 INSTRUCTION NOT TO ANSWER
12	12 Page Line
13	13 2
14 VIDEOTAPED DEPOSITION OF DEVADAS PATIL, VOLUME 1,	14
15 taken on behalf of the Defendant, at Wilson Sonsini	15
16 Goodrich & Rosati, 650 Page Mill Road, Palo Alto,	16
17 California, beginning at 9:25 a.m. and ending at	17
18 3:44 p.m. on Sunday, February 21, 2016, before	18
19 RACHEL FERRIER, Certified Shorthand Reporter No. 6948.	19
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2	2 NUMBER DESCRIPTION PAGE
3 For Plaintiff:	3
4 KEKER & VAN NEST LLP	4 Exhibit 310 Subpoena to Testify at a
5 BY: RYAN WONG	5 Deposition in a Civil
6 Attorney at Law	6 Action to Devadas Patil 21
7 633 Battery Street	7 Exhibit 311 Letter dated 2/19/16 to
8 San Francisco, CA 94111	8 Devadas Patil from Sean Park 22
9 415.773.6682	9 Exhibit 312 Resume for Devadas Patil 29
10 rwong@kvn.com	10 Exhibit 313 Resume for Devadas Patil
11	11 (Bates CSI-CLI-01611242 -
12 For Defendant:	12 01611243) 49
13 QUINN EMANUEL URQUHART & SULLIVAN, LLP	13 Exhibit 314 "Business Development Trends and
14 BY: MATTHEW D. CANNON	14 Analysis for the Data Networking
15 Attorney at Law	15 Market" by Devadas Patil 107
16 50 California Street, 22nd Floor	16 Exhibit 315 IEEE 802.1AB Standard for
17 San Francisco, CA 94111	17 local and metropolitan
18 415.875.6412	18 area networks
19 matthewcannon@quinnemanuel.com	19 (Bates ARISTANDCA00017907
20	20 - 18078) 117
21	21 Exhibit 316 Spreadsheet entitled
22 Videographer:	22 "Corrected Information
23 SOSEH KEVORKIAN	23 Regarding Cisco Command
24	24 Expression Associated
25	25 with Devadas Patil" 121
	21 Exhibit 317 LLDP on Cisco IOS Software
	22 Functional Specification
	23 (Bates CSI-CLI-01507526
	24 - 01507544) 134
	25
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1	EXHIBITS	
2	NUMBER DESCRIPTION PAGE	
3		
4	Exhibit 318 Parser-Police Manifest,	
5	Version 5	
	(Bates CSI-CLI-00358164)	165
6	Exhibit 319 E-mail dated 10/10/07	
7	from Devadas Patil	
8	(Bates CSI-CLI-00836482)	176
9	Exhibit 320 E-mail chain dated 8/10/06	
10	from Devadas Patil	
	(Bates CSI-CLI-00817320	
11	- 817321)	180
12	Exhibit 321 E-mail chain dated 8/21/06	
13	from Devadas Patil	
14	(Bates CSI-CLI-0817660)	183
15	Exhibit 322 Cisco IOS Carrier Ethernet	
	Command Reference	
16	(Bates CSI-CLI-00291752	
17	- 292238)	191
18	Exhibit 323 E-mail chain dated 1/5/06	
19	from Devadas Patil	
20	(Bates CSI-CLI-00810826	
	- 810828)	208
21	Exhibit 324 E-mail chain dated 2/1/06	
22	from Devadas Patil	
23	(Bates CSI-CLI-00811125	
24	- 811128)	212
25		
		Page 6
1	MR. CANNON: Matthew Cannon from Quinn, Emanuel	09:26AM
2	on behalf of Plaintiff Cisco and the witness.	09:26AM
3	THE VIDEOGRAPHER: Thank you.	09:26AM
4	DEVADAS PATIL,	09:26AM
5	having been administered an oath, was examined and	09:26AM
6	testified as follows:	09:26AM
7	EXAMINATION	09:26AM
8	BY MR. WONG:	09:26AM
9	Q Good morning.	09:26AM
10	A Morning.	09:26AM
11	Q Please state your full name for the record.	09:26AM
12	A Devadas Patil.	09:26AM
13	Q And, Mr. Patil, what is your home address?	09:26AM
14	A 3137 Kittery Avenue in San Ramon, California	09:26AM
15	94583.	09:26AM
16	Q And who is your current employer, Mr. Patil?	09:26AM
17	A GE Digital.	09:27AM
18	Q Do you have a work e-mail address for GE Digital?	09:27AM
19	A I do.	09:27AM
20	Q Could you please state it for the record.	09:27AM
21	A It is devadas.patil@ge.com.	09:27AM
22	Q Do you have any personal e-mail addresses that	09:27AM
23	you use, Mr. Patil?	09:27AM
24	A I do.	09:27AM
25	Q Could you please state those for the record.	09:27AM
		Page 8
1	Palo Alto, California; Sunday, February 21, 2016	
2	9:25 a.m.	
3		
4	THE VIDEOGRAPHER: Good morning.	09:25AM
5	THE WITNESS: Morning.	09:25AM
6	THE VIDEOGRAPHER: We are on the record at	09:25AM
7	9:25 a.m. on February 21st, 2016.	09:25AM
8	This is the video-recorded deposition of Devadas	09:25AM
9	Patil.	09:25AM
10	My name is Soseh Kevorkian, here with our Court	09:25AM
11	Reporter, Rachel Ferrier. We are here on behalf of	09:25AM
12	Defendants at 650 Page Mill Road in Palo Alto,	09:25AM
13	The caption of this case is Cisco Systems,	09:25AM
14	Incorporated, versus Arista Networks, Incorporated, Case	09:25AM
15	No. 5:14-cv-05344- BLF(PSG).	09:25AM
16	Please note that audio and video recording will	09:25AM
17	take place unless all parties agree to go off the	09:26AM
18	record.	09:26AM
19	Microphones are sensitive. They pick up	09:26AM
20	whispers, private conversations, and all cellular	09:26AM
21	interference.	09:26AM
22	At this time, would counsel and all present	09:26AM
23	please identify themselves for the record.	09:26AM
24	MR. WONG: Ryan Wong from Keker & Van Nest for	09:26AM
25	Defendant Arista Networks.	09:26AM
		Page 7
1	A Dpatil44@hotmail.com.	09:27AM
2	Q Anything else?	09:27AM
3	A That's the only one I do use.	09:27AM
4	Q Okay. And you current -- or, excuse me, strike	09:27AM
5	that.	09:27AM
6	You previously worked for Cisco; correct?	09:27AM
7	A That's correct.	09:27AM
8	Q Did you have an e-mail address when you were	09:27AM
9	employed at Cisco?	09:27AM
10	A Yes.	09:27AM
11	Q And what was that e-mail address while you were	09:27AM
12	employed at Cisco?	09:27AM
13	A If I recall from five years ago, it's	09:27AM
14	dpatil@cisco.com, I think.	09:27AM
15	Q Okay. Mr. Patil, are you being represented by	09:28AM
16	counsel at this deposition?	09:28AM
17	A Yes.	09:28AM
18	Q Okay. And who's representing you at this	09:28AM
19	deposition?	09:28AM
20	A Matt Cannon.	09:28AM
21	Q Mr. Cannon --	09:28AM
22	A Mr. Cannon --	09:28AM
23	Q -- to your left?	09:28AM
24	A Correct.	09:28AM
25	Q Have you ever been deposed before, Mr. Patil?	09:28AM
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1 MR. WONG: Right. 12:24PM	1 activity for LLDP was -- was happening, and it -- I 12:28PM
2 Q The Arista Networks's EOS was an example of 12:24PM	2 recall that it was -- it was slow for a period of time 12:28PM
3 innovation in this area; correct? 12:24PM	3 in between and then it took off again. 12:28PM
4 MR. CANNON: Objection; vague -- 12:24PM	4 BY MR. WONG: 12:28PM
5 THE WITNESS: Example, yes. 12:24PM	5 Q And you didn't participate in any of the efforts 12:28PM
6 MR. CANNON: -- mischaracterizes prior testimony, 12:24PM	6 to standardize LLDP from the '90s to 2004; is that 12:28PM
7 lacks foundation, calls for improper opinion testimony. 12:24PM	7 right? 12:28PM
8 BY MR. WONG: 12:24PM	8 A No. No. 12:28PM
9 Q And these are -- these are your words here on 12:24PM	9 Q And you played no role whatsoever in the creation 12:28PM
10 page 17 of Exhibit 314; correct, Mr. Patil? 12:24PM	10 of the LLDP standard; correct? 12:28PM
11 A These are my words, yes. 12:24PM	11 A No. 12:28PM
12 Q And you believed them to be true when you wrote 12:24PM	12 Q And how did you first learn about LLDP? 12:28PM
13 your thesis marked as Exhibit 314; correct? 12:24PM	13 A When I was tasked to lead that project at Cisco. 12:28PM
14 MR. CANNON: Objection; calls for improper 12:24PM	14 Q Who tasked you to lead that project at Cisco? 12:29PM
15 opinion testimony, lacks foundation. 12:24PM	15 A My director. 12:29PM
16 THE WITNESS: These are my words. These are my 12:24PM	16 Q Who was your director? 12:29PM
17 opinions. 12:25PM	17 A Purnam Sheth. 12:29PM
18 MR. WONG: Yeah. 12:25PM	18 Q Can you spell that, please. 12:29PM
19 Q Can you please provide me with a general 12:25PM	19 A S-h-e-t-h is the last name, and first name is 12:29PM
20 description of what "LLDP" is? 12:25PM	20 P-u-r-n-a-m. 12:29PM
21 A Yes. Yes, I can. 12:25PM	21 Q And how did you learn about the LLDP standard, 12:29PM
22 Q What -- what is "LLDP"? 12:25PM	22 the -- the way it worked? 12:29PM
23 A "LLDP" stands for Link Layer Discovery Protocol, 12:25PM	23 A I -- upon being tasked with this -- with this 12:29PM
24 and it is a -- at a high-level, it's a standardized way 12:25PM	24 project, to lead this project, I did some initial 12:29PM
25 for devices to discover each other and know of each 12:25PM	25 research and it was very aggressive project at that 12:29PM
Page 114	Page 116
1 other. 12:25PM	1 point, and so I -- yeah, I researched it actively and 12:29PM
2 Q When you say it's a "standardized way for devices 12:25PM	2 wanted to know as much of it as possible as early as 12:29PM
3 to discover each other and know of each other," what do 12:26PM	3 possible. 12:29PM
4 you mean by a "standardized way"? 12:26PM	4 Q When were you tasked with the LLDP project? 12:29PM
5 A "Standardized" in the sense that it's a industry 12:26PM	5 A Late 2005. 12:30PM
6 standardized agreement and -- and ratified agreement on 12:26PM	6 Q And what documents, if any, did you review to 12:30PM
7 how a discovery can happen in a standardized way, and 12:26PM	7 learn about the LLDP standard? 12:30PM
8 it's meant in contrast with how proprietary discovery 12:26PM	8 A I recall reviewing the very first version of the 12:30PM
9 mechanisms can happen. 12:26PM	9 RFC that they put out that was still not ratified, but 12:30PM
10 Q When you say it's a "ratified agreement," what do 12:26PM	10 there was an RFC and that -- that got me into it, yeah. 12:30PM
11 you mean by "ratified"? 12:26PM	11 Q Did you review the IEEE standard that related to 12:30PM
12 A "Ratified" means something that has been -- 12:26PM	12 LLDP? 12:30PM
13 something that has withstood the test of time and has 12:26PM	13 A Yes. 12:30PM
14 been reviewed by several experts in the industry who -- 12:27PM	14 MR. WONG: Let's mark this as 315, please. 12:30PM
15 who have the ability to see that -- not just from a 12:27PM	15 (Exhibit 315 was marked for 12:31PM
16 feature perspective but also from a holistic perspective 12:27PM	16 identification by the Court Reporter.) 12:31PM
17 to see if it was actually viable -- viable to do that, 12:27PM	17 MR. WONG: The Reporter has marked, as 12:31PM
18 and then they collectively meet and discuss their 12:27PM	18 Exhibit 315, document bearing control numbers 12:31PM
19 concerns and refine the standard appropriately and then 12:27PM	19 ARISTANDCA00017907 to 18078. 12:31PM
20 agree on a version that is -- that can be considered 12:27PM	20 Q Mr. Patil, do you recognize the document marked 12:31PM
21 standard. 12:27PM	21 as Exhibit 315? 12:31PM
22 Q Do you know when LLDP was standardized? 12:27PM	22 A I do. 12:31PM
23 MR. CANNON: Objection; vague. 12:27PM	23 Q And what is the document marked as Exhibit 315? 12:31PM
24 THE WITNESS: The initial attempt, I think, from 12:27PM	24 A This is the 802.1AB, which is the technical name 12:31PM
25 late '90s to early -- to 2004 is when the standards 12:28PM	25 for LLDP, and it's an IEEE standard that represents the 12:31PM
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1 A Okay. Yeah, I'm done. 01:04PM	1 mentioned, did the LLDP project involve implementing 01:07PM
2 Q Do you understand that Cisco has identified you 01:04PM	2 LLDP on those other operating systems? 01:07PM
3 as the author or originator of the commands lifted -- 01:04PM	3 A I was not aware of that. 01:07PM
4 listed on the left-side column of Exhibit 316? 01:05PM	4 Q Okay. So your personal involvement in Phase 1 of 01:07PM
5 A Yes. 01:05PM	5 the LLDP project focused only on implementing LLDP for 01:07PM
6 Q Okay. Now, are these commands listed in 01:05PM	6 Cisco IOS; correct? 01:08PM
7 Exhibit 316 associated with the LLDP project that we 01:05PM	7 A Mm-hmm. Yeah. 01:08PM
8 have been talking about this morning? 01:05PM	8 Q We mentioned -- strike that. 01:08PM
9 A Yes. 01:05PM	9 You mentioned the different stages that were part 01:08PM
10 Q Were these commands added to Cisco IOS as part of 01:05PM	10 of Phase 1 of the LLDP project. 01:08PM
11 Phase 1 of the LLDP project? 01:05PM	11 Do you remember that? 01:08PM
12 A Yes. That's correct, yes. 01:05PM	12 A Yes. 01:08PM
13 Q Okay. You can set that aside for now, Mr. Patil. 01:05PM	13 Q Can you let me know -- strike that. 01:08PM
14 We were talking before the break about how you 01:05PM	14 Can you list for me again the stages in the order 01:08PM
15 became involved in the LLDP project. 01:05PM	15 that they are handled? 01:08PM
16 Do you remember that? 01:05PM	16 MR. CANNON: Objection; asked and answered. 01:08PM
17 A Mm-hmm. 01:05PM	17 THE WITNESS: It's market analysis, slash, 01:08PM
18 Q Were there particular Cisco products that the 01:05PM	18 requirements as Stage 1. Architecture would be Stage 2. 01:08PM
19 LLDP implementation was going to apply to? 01:05PM	19 Design would be Stage 3, and implementation and testing 01:08PM
20 A Yes. 01:05PM	20 would be Stages 4 and 5. 01:08PM
21 Q Okay. And I'm asking at the time that you 01:05PM	21 BY MR. WONG: 01:08PM
22 started working on the LLDP project. 01:05PM	22 Q Testing is the fifth stage; correct? 01:08PM
23 Do you understand? 01:05PM	23 A Yes. 01:08PM
24 A Mm-hmm. 01:05PM	24 Q And it would go in that order, from Stage 1 to 01:08PM
25 Q What Cisco products were targeted for the LLDP 01:05PM	25 Stage 2 to Stage 3 to Stage 4 to Stage 5; correct? 01:09PM
Page 122	Page 124
1 implementation at the start of Phase 1 of the project? 01:06PM	1 A Technically, yes, but in the interest of time, 01:09PM
2 A The initial rollout was for the Catalyst family 01:06PM	2 some of these phases will -- stages will overlap. 01:09PM
3 of enterprise switches, the Catalyst 6500, the 01:06PM	3 Q How long did Phase 1 of the LLDP project take to 01:09PM
4 Catalyst 3000 series was soon to follow after that and, 01:06PM	4 go from Stage 1 to Stage 5? 01:09PM
5 later on, other platforms, including the SRIK, it opted 01:06PM	5 A I would say Stage 1 to Stage 5, roughly six 01:09PM
6 the standard. 01:06PM	6 months. 01:09PM
7 Q When you say "later on, other platforms," what do 01:06PM	7 Q So it took six months to go from the 01:09PM
8 you mean by "later on"? 01:06PM	8 marketing/requirements stage all the way through the 01:09PM
9 A "Later on" as in the 2010-11 time frame, yeah. 01:06PM	9 fifth testing stage for -- for Phase 1; correct? 01:09PM
10 Q Okay. So initially in 2005, though, what were 01:06PM	10 A Yes. 01:09PM
11 the targeted Cisco products for the LLDP implementation? 01:06PM	11 Q Which of the five stages consumed the most time 01:09PM
12 A The Catalyst switches. 01:06PM	12 out of those six months? 01:09PM
13 Q And in terms of the operating system that the 01:06PM	13 A Architecture and design. 01:10PM
14 LLDP implementation would apply to, was it just Cisco 01:07PM	14 Q Oh, Stages 2 and 3? 01:10PM
15 IOS? 01:07PM	15 A Yes. 01:10PM
16 A Yes. 01:07PM	16 Q Did either architecture or design take more time 01:10PM
17 Q Okay. You are aware of other operating systems 01:07PM	17 than the other? 01:10PM
18 that are used by other Cisco products? 01:07PM	18 A I would say architecture took -- took more than a 01:10PM
19 A I am. 01:07PM	19 couple -- couple months to firm up. 01:10PM
20 Q What are the other operating systems that you are 01:07PM	20 Q So how many months or weeks -- strike that. 01:10PM
21 aware of that are used by other Cisco products? 01:07PM	21 How long, approximately, did it take for the 01:10PM
22 A The Cisco XR, Cisco ENA. I think it's been 01:07PM	22 design stage of Phase 1 of the LLDP project to be 01:10PM
23 renamed the NX-OS. There's also -- what do they call -- 01:07PM	23 completed? 01:10PM
24 the software router, but those are the main ones. 01:07PM	24 A About three and a half to four weeks. 01:10PM
25 Q And those other operating systems that you just 01:07PM	25 Q And what is part of the design stage for Phase 1 01:10PM
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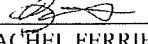
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1 A Compliant with, yes. 01:37PM	1 that with one -- with just one vendor's equipment just 01:40PM
2 Q In the third paragraph on page 3 of Exhibit 317, 01:37PM	2 to make SNMP work, and that level of interoperability at 01:40PM
3 first sentence says, "LLDP facilitates the use of 01:37PM	3 the SNMP level can be very handy in -- in -- in larger 01:40PM
4 standard management tools such as SNMP in a multi-vendor 01:37PM	4 networks. 01:40PM
5 network..." 01:37PM	5 BY MR. WONG: 01:40PM
6 Do you see that? 01:37PM	6 Q If there wasn't the standardization for SNMP 01:40PM
7 A Yes. 01:37PM	7 inquiries and you had a multivendor network, would you 01:40PM
8 Q What do you mean by that statement? 01:37PM	8 have to write different SNMP inquiries for each network? 01:40PM
9 A So the answer to that might get a little 01:37PM	9 MR. CANNON: Objection; vague, incomplete 01:41PM
10 technical, but I'll say that anyway. 01:37PM	10 hypothetical, lacks foundation, calls for improper 01:41PM
11 Part of the IEEE standard is also a specification 01:37PM	11 opinion testimony. 01:41PM
12 of topology Management Information Base, which can be 01:37PM	12 THE WITNESS: If that were the case, then -- then 01:41PM
13 developed to make SNMP queries, so if the Management 01:37PM	13 we are -- we are essentially talking of vendor-specific 01:41PM
14 Information Base can be standard across all vendors, 01:37PM	14 Management Information Bases, and that would, at the 01:41PM
15 that means that the SNMP queries will apply universally 01:38PM	15 very least, at least require some level of nonstandard 01:41PM
16 across all vendors, and that's the -- the added 01:38PM	16 or tailored queries for each vendor. 01:41PM
17 advantage of standardizing this. 01:38PM	17 BY MR. WONG: 01:41PM
18 Q And what is "SNMP"? 01:38PM	18 Q If you turn back to Exhibit 315, it's the IEEE 01:42PM
19 A It -- it stands for Simple Network Management 01:38PM	19 standard for LLDP. 01:42PM
20 Protocol. 01:38PM	20 A Yes. 01:42PM
21 Q And how was -- what's the function or purpose of 01:38PM	21 Q Now, LLDP is a defined term in the IEEE standard; 01:42PM
22 SNMP? 01:38PM	22 correct? 01:42PM
23 MR. CANNON: Objection; vague. 01:38PM	23 A Yes. 01:42PM
24 THE WITNESS: The purpose of SNMP is to, 01:38PM	24 Q In fact, if you look to page 5 of -- and I'm 01:42PM
25 essentially, allow network administrators and engineers 01:38PM	25 looking -- pointing to page 5 at the bottom of the page 01:42PM
Page 146	Page 148
1 and developers to be able to create network information 01:38PM	1 of Exhibit 315, there is a section on the top that it 01:42PM
2 and send -- send trap -- what are called -- technically 01:38PM	2 says "Definitions and numerical representation." 01:42PM
3 called "traps," SNMP traps, to signal significant events 01:39PM	3 Do you see that? 01:42PM
4 in a network. And it's a protocol that persists network 01:39PM	4 A Yes. 01:42PM
5 information in a -- in a place called MIB, Management 01:39PM	5 Q And entry 3.1.6 -- 01:42PM
6 Information Base, and then provides a user interface 01:39PM	6 A Yes. 01:42PM
7 to -- to query that data. 01:39PM	7 Q -- defines Link Layer Discovery Protocol and, in 01:42PM
8 BY MR. WONG: 01:39PM	8 parentheses, LLDP. 01:42PM
9 Q And I think you said that if the Management 01:39PM	9 Do you see that? 01:42PM
10 Information Base, or MIB, can be standard across all 01:39PM	10 A Mm-hmm. 01:42PM
11 vendors, that means that the SNMP inquiries [sic] will 01:39PM	11 Q So you were aware that LLDP was a defined acronym 01:42PM
12 apply universally across all vendors; right? 01:39PM	12 in the actual IEEE standard while you were working on 01:43PM
13 A Yes. 01:39PM	13 Phase 1 of the LLDP project; correct? 01:43PM
14 Q So that means that a network administrator and 01:39PM	14 MR. CANNON: Objection; vague. 01:43PM
15 engineers can use the same SNMP inquiries for different 01:39PM	15 THE WITNESS: Yes. 01:43PM
16 vendor products; correct? 01:39PM	16 BY MR. WONG: 01:43PM
17 A Correct, if they are connect -- interconnected. 01:39PM	17 Q If you turn the page to page 6 -- 01:43PM
18 Q And what's the advantage of -- what's the 01:39PM	18 A Mm-hmm. 01:43PM
19 advantage to a network administrator to be able to use 01:40PM	19 Q -- entry 3.1.21. 01:43PM
20 the same SNMP inquiries for different vendor products? 01:40PM	20 Do you see that? 01:43PM
21 MR. CANNON: Objection; vague, lacks foundation, 01:40PM	21 A Yes. 01:43PM
22 calls for improper opinion testimony. 01:40PM	22 Q It says, "type, length, value (TLV)." 01:43PM
23 THE WITNESS: If a certain topology or deployment 01:40PM	23 Do you see that? 01:43PM
24 includes multiple -- inputs equipment from multiple 01:40PM	24 A Yes. 01:43PM
25 vendors, they don't have to tear that apart and replace 01:40PM	25 Q You were aware, by Stage 1 or at least Stage 2 of 01:43PM
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1 Phase 1 of the LLDP project, that the IEEE standard for	01:43PM	1 that?	01:45PM
2 LLDP defined the acronym TLV; correct?	01:43PM	2 MR. WONG: I'll tell you once I see it. Yes,	01:45PM
3 MR. CANNON: Objection; vague, mischaracterizes	01:43PM	3 page 39. Control number is -- ends in 17959.	01:46PM
4 the document,	01:43PM	4 Q Are you there?	01:46PM
5 THE WITNESS: Yes.	01:43PM	5 A Yeah, I am.	01:46PM
6 BY MR. WONG:	01:43PM	6 Q So Section 10.3.4 is called "Too many neighbors."	01:46PM
7 Q In fact, on page 7 of Exhibit 315, at the very	01:43PM	7 Do you see that?	01:46PM
8 top, it's a section called "Acronyms and abbreviations";	01:43PM	8 A Mm-hmm.	01:46PM
9 correct?	01:43PM	9 Q Now, we were talking earlier about the use of the	01:46PM
10 A Yes.	01:43PM	10 word "neighbors" in the functional specification that	01:46PM
11 Q And both LLDP and TLV are listed as defined	01:43PM	11 you wrote --	01:46PM
12 acronyms within the IEEE LLDP standard; right?	01:43PM	12 A Yes.	01:46PM
13 A Yes.	01:44PM	13 Q -- right?	01:46PM
14 Q And you were aware of that before you began the	01:44PM	14 A Yes.	01:46PM
15 design stage for Phase 1 of the LLDP project; right?	01:44PM	15 Q Is this use of the word "neighbors" here in the	01:46PM
16 A Yes.	01:44PM	16 IEEE specification the -- the same use of the word	01:46PM
17 Q And you were aware of that during the design	01:44PM	17 "neighbors" that you were using in the functional	01:46PM
18 period for the LLDP project; correct?	01:44PM	18 specification?	01:46PM
19 A Yes.	01:44PM	19 MR. CANNON: Objection; vague.	01:46PM
20 Q And if you look at Exhibit 316, which is this	01:44PM	20 THE WITNESS: I was -- I read this specification	01:46PM
21 list of commands?	01:44PM	21 thoroughly, so I -- yeah, I was influenced by some of	01:46PM
22 A Okay.	01:44PM	22 the language in here.	01:47PM
23 Q Are you there?	01:44PM	23 BY MR. WONG:	01:47PM
24 Each of the commands associated with you include	01:44PM	24 Q But you -- you became familiar with the	01:47PM
25 the acronym LLDP.	01:44PM	25 terminology relevant to LLDP by reading the IEEE	01:47PM
Page 150		Page 152	
1 Do you see that?	01:44PM	1 standard on LLDP; right?	01:47PM
2 A Yes.	01:44PM	2 MR. CANNON: Objection; vague.	01:47PM
3 Q That LLDP is the same LLDP that is defined within	01:44PM	3 THE WITNESS: Yes.	01:47PM
4 the IEEE LLDP standard; right?	01:44PM	4 BY MR. WONG:	01:47PM
5 MR. CANNON: Objection; vague.	01:44PM	5 Q And in particular here, you were aware that the	01:47PM
6 THE WITNESS: It's -- yeah, it -- it refers to	01:44PM	6 term "neighbors" was used in the IEEE LLDP standard;	01:47PM
7 the Link Layer Discovery Protocol.	01:44PM	7 right?	01:47PM
8 BY MR. WONG:	01:45PM	8 A Mm-hmm.	01:47PM
9 Q I mean, that's the same acronym that appears here	01:45PM	9 MR. CANNON: Objection; vague.	01:47PM
10 on page 7 of Exhibit 315; right? Under "Acronyms and	01:45PM	10 BY MR. WONG:	01:47PM
11 abbreviations" within the IEEE standard; correct?	01:45PM	11 Q Oh, I'm sorry, can you -- let me -- let me ask	01:47PM
12 MR. CANNON: Objection; documents speak for	01:45PM	12 the question one more time.	01:47PM
13 themselves.	01:45PM	13 And in particular here, Section 10.3.4 of	01:47PM
14 THE WITNESS: Yes.	01:45PM	14 Exhibit 315, you were aware that the term "neighbors"	01:47PM
15 BY MR. WONG:	01:45PM	15 was used in the IEEE LLDP standard, yes?	01:47PM
16 Q And your choice of LLDP in each of the commands	01:45PM	16 MR. CANNON: Objection; vague.	01:47PM
17 listed on Exhibit 316, that was intentionally meant to	01:45PM	17 THE WITNESS: Yes.	01:47PM
18 refer to the LLDP acronym within the IEEE standard;	01:45PM	18 BY MR. WONG:	01:47PM
19 right?	01:45PM	19 Q Can you turn to page -- or Section 5.2, please,	01:48PM
20 MR. CANNON: Objection; vague.	01:45PM	20 of Exhibit 315, and that is page 8.	01:48PM
21 THE WITNESS: Yes.	01:45PM	21 Are you there?	01:48PM
22 BY MR. WONG:	01:45PM	22 A Yes.	01:48PM
23 Q If you look at Section 10.3.4 of Exhibit 315 --	01:45PM	23 Q Section 5.2 on page 8 of Exhibit 315 says	01:48PM
24 let me know when you are there.	01:45PM	24 "Required capabilities."	01:48PM
25 MR. CANNON: Do you have the page number for	01:45PM	25 Do you see that?	01:48PM
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CONFIDENTIAL

1 I, the undersigned, a Certified Shorthand
2 Reporter of the State of California, do hereby certify:
3 That the foregoing proceedings were taken before
4 me at the time and place herein set forth; that any
5 witnesses in the foregoing proceedings, prior to
6 testifying, were placed under oath; that a verbatim
7 record of the proceedings was made by me using machine
8 shorthand which was thereafter transcribed under my
9 direction; further, that the foregoing is an accurate
10 transcription thereof.
11 I further certify that I am neither financially
12 interested in the action nor a relative or employee of
13 any attorney or any of the parties.
14 IN WITNESS WHEREOF, I have this date subscribed
15 my name.
16 Dated: March 2, 2016
17
18
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20 
21 RACHEL FERRIER
22 CSR No. 6948
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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC.,)
Plaintiff,)
vs.) Case No.:
5:14-cv-05344-BLF (PSG)
ARISTA NETWORKS, INC.,)
Defendant.)

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VIDEOTAPED DEPOSITION OF ABHAY ROY
Palo Alto, California
Friday, December 18, 2015
Volume 1

Reported by:
RACHEL FERRIER
CSR No. 6948
Job No. 2200521
PAGES 1 - 232

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<p>1 UNITED STATES DISTRICT COURT 2 NORTHERN DISTRICT OF CALIFORNIA 3 SAN JOSE DIVISION 4 5 _____ 6 CISCO SYSTEMS, INC.,) 7 Plaintiff,) 8 vs.)Case No.: 9 ARISTA NETWORKS, INC.,)5:14-cv-05344-BLF(PSG) 10 Defendant.) 11 _____ 12 13 VIDEOTAPED DEPOSITION OF ABHAY ROY, VOLUME 1 14 taken on behalf of the Defendant, at Wilson Sonsini 15 Goodrich & Rosati, 601 California Avenue, Palo Alto, 16 California, beginning at 9:30 a.m. and ending at 17 4:47 p.m. on Friday, December 18, 2015, before 18 RACHEL FERRIER, Certified Shorthand Reporter No. 6948. 19 20 21 22 23 24 25</p>	<p>1 APPEARANCES (continued): 2 3 For Defendant ARISTA NETWORKS, INC.: 4 KEKER & VAN NEST, LLP 5 BY: DAVID J. SILBERT 6 ELIZABETH K. McCLOSKEY 7 Attorneys at Law 8 633 Battery Street 9 San Francisco, CA 94111 10 415.676.2269 11 dsilbert@kvn.com 12 emccloskey@kvn.com 13 14 Videographer: 15 CASSIA LEET 16 17 18 19 20 21 22 23 24 25</p>
Page 2	Page 4
<p>1 APPEARANCES: 2 3 For Plaintiff CISCO SYSTEMS, INC., and the Witness: 4 QUINN EMANUEL URQUHART & SULLIVAN LLP 5 BY: JOHN M. NEUKOM 6 Attorney at Law 7 50 California Street, 22nd Floor 8 San Francisco, CA 94111 9 415.875.6320 10 johnneukom@quinnemanuel.com 11 and 12 QUINN EMANUEL URQUHART & SULLIVAN LLP 13 BY: SIDNEY ARCHIBALD 14 Attorney at Law 15 555 Twin Dolphin Drive, 5th Floor 16 Redwood Shores, CA 94065 17 650.801.5000 18 sydneyarchibald@quinnemanuel.com 19 20 21 22 23 24 25</p>	<p>1 INDEX 2 WITNESS EXAMINATION 3 ABHAY ROY 4 VOLUME 1 5 6 BY MR. SILBERT 10, 87, 219 7 8 9 EXHIBITS 10 NUMBER DESCRIPTION PAGE 11 Exhibit 51 LinkedIn Profile for Abhay Roy 11 12 13 Exhibit 52 Cisco IOS Master Command List, All Releases 18 14 Exhibit 53 CLI Design and Review Guide 15 (Bates CSI-ANI-00073381 - 00073381.000014) 40 16 17 Exhibit 54 Cisco's Third Supplemental Response to Interrogatory No. 16 and Response to 18 Interrogatory No. 19 Amended Exhibit F 57 19 20 Exhibit 55 Bidirectional Forwarding Detection (BFD) for IPv4 and IPv6 (Single Hop) 21 (Bates ARISTANDCA00030805 - 00030811) 61 22 23 Exhibit 56 The OSPF Specification (Bates ARISTANDCA00022597 - 00022703) 80 24 25</p>
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<p>1 EXHIBITS</p> <p>2 NUMBER DESCRIPTION PAGE</p> <p>3 Exhibit 57 Bidirectional Forwarding Detection (BFD)</p> <p>4 (Bates ARISTANDCA00030756 - 00030804) 99</p> <p>5</p> <p>6 Exhibit 58 Internet Protocol, Version 6 (IPv6) Specification</p> <p>7 (Bates ARISTANDCA00025710 - 00025746) 105</p> <p>8</p> <p>9 Exhibit 59 OSPF Commands: ip ospf fast-reroute per-prefix through R 130</p> <p>10</p> <p>11 Exhibit 60 CSCdi42640 (Bates CSI-CLI-01542004) 137</p> <p>12 Exhibit 61 CSCdj76740 140</p> <p>13 Exhibit 62 CSCdj76740 140</p> <p>14 Exhibit 63 Screen shot of a webpage titled "Do you have knowledge of IPR in draft-ietf-isis-mi" 169</p> <p>15</p> <p>16 Exhibit 64 Screen shot of a webpage titled "Re:[68ATTENDEES] RFC Author License Execution Opportunity" 171</p> <p>17</p> <p>18 Exhibit 65 E-mail chain dated 11/23/15 to Leo Boulton, et al., from Brian Jackson</p> <p>19 (Bates CSI-CLI-01477442 - 01477448) 179</p> <p>20</p> <p>21 Exhibit 66 E-mail chain dated 9/8/15 from Umesh Dudani to Abhay Roy</p> <p>22 (Bates CSI-CLI-01438733 - 01438743) 193</p> <p>23</p> <p>24</p> <p>25</p> <p>Page 6</p>	<p>1 INDEX (Continued):</p> <p>2 PREVIOUSLY MARKED EXHIBITS</p> <p>3 EXHIBIT PAGE</p> <p>4 29 75</p> <p>5 (Retained by Counsel)</p> <p>6</p> <p>7 INSTRUCTION NOT TO ANSWER</p> <p>8 Page Line</p> <p>9 57 23</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>Page 8</p>
<p>1 EXHIBITS</p> <p>2 NUMBER DESCRIPTION PAGE</p> <p>3 Exhibit 67 E-mail chain dated 7/3/13 from Vittal Krishnamurthy to Pranav Mehta, et al. (Bates CSI-CLI-01483915 - 01483921) 201</p> <p>4</p> <p>5 Exhibit 68 E-mail chain dated 9/16/15 from Shane Corban to Yong Hu, et al. (Bates CSI-CLI-01440122 - 01440128) 204</p> <p>6</p> <p>7 Exhibit 69 OSPFv3 support in IOS Software Unit Functional Specification (Bates CSI-CLI-00609752 - 00609769) 219</p> <p>8</p> <p>9 Exhibit 70 Support of BFD in OSPFv2 Functional Specification (Bates CSI-CLI-00610401 - 00610409) 219</p> <p>10</p> <p>11 Exhibit 71 CSCdk33792 219</p> <p>12</p> <p>13 Exhibit 72 CSCdk33792 219</p> <p>14</p> <p>15 Exhibit 73 Support of BFD in OSPFv2 Functional Specification (Bates CSI-CLI-00610410 - 00610420) 219</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>Page 7</p>	<p>1 Palo Alto, California; Friday, December 18, 2015</p> <p>2 9:30 a.m.</p> <p>3 09:30AM</p> <p>4 THE VIDEOGRAPHER: Good morning. We are on the 09:30AM</p> <p>5 record at 9:30 a.m. on December 18th, 2015. 09:30AM</p> <p>6 This is the video-recorded deposition of 09:30AM</p> <p>7 Abhay Roy. 09:30AM</p> <p>8 My name is Cassia Leet, here with our Court 09:30AM</p> <p>9 Reporter, Rachel Ferrier. We are here from Veritext 09:30AM</p> <p>10 Legal Solutions at the request of counsel for the 09:30AM</p> <p>11 defendant. 09:30AM</p> <p>12 This deposition is being held at 601 California 09:30AM</p> <p>13 Avenue, Palo Alto, California 94304. 09:30AM</p> <p>14 The caption of this case is Cisco Systems, Inc., 09:31AM</p> <p>15 versus Arista Networks, Inc., in the United States 09:31AM</p> <p>16 District Court, Northern District of California, 09:31AM</p> <p>17 San Jose Division, Case No. 5:14-cv-05344-BLF (PSG). 09:31AM</p> <p>18 Please note that the audio and video recording 09:31AM</p> <p>19 will take place unless all parties agree to go off the 09:31AM</p> <p>20 record. Microphones are sensitive and may pick up 09:31AM</p> <p>21 whispers and private conversations. 09:31AM</p> <p>22 I am not related to any party in this action, nor 09:31AM</p> <p>23 am I financially interested in the outcome in any way. 09:31AM</p> <p>24 If there are any objections to the proceeding, 09:31AM</p> <p>25 please state them at the time of your appearance, 09:31AM</p> <p>Page 9</p>

3 (Pages 6 - 9)

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<p>1 Q Okay. What's the significance of the term "ip" 11:24AM</p> <p>2 at the start of this command? 11:24AM</p> <p>3 A IP -- I think we -- we kept "ip" as the top-level 11:24AM</p> <p>4 keyword for things which were related to IP before, so 11:24AM</p> <p>5 "ip" really implies IP Version 4. 11:24AM</p> <p>6 Q Okay. And just to back up for a second, IP 11:24AM</p> <p>7 stands for Internet protocol; correct? 11:24AM</p> <p>8 A That is correct. 11:24AM</p> <p>9 Q And IPv4 stands for -- or refers to Version 4 of 11:24AM</p> <p>10 the Internet protocol; is that correct? 11:24AM</p> <p>11 A That is correct. That is correct. 11:24AM</p> <p>12 Q And the Internet protocol is specified in a 11:24AM</p> <p>13 standard published by the IETF; correct? 11:24AM</p> <p>14 A That it's correct. 11:24AM</p> <p>15 Q And IPv4 is specified in a standard published by 11:24AM</p> <p>16 the IP -- IETF; correct? 11:25AM</p> <p>17 A Yes, that's correct. 11:25AM</p> <p>18 Q Okay. The acronym IP was used by the industry to 11:25AM</p> <p>19 refer to Internet protocol before Cisco used it in CLI 11:25AM</p> <p>20 commands; correct? 11:25AM</p> <p>21 MR. NEUKOM: Objection; foundation. 11:25AM</p> <p>22 THE WITNESS: So the term "IP," just like we 11:25AM</p> <p>23 discussed for BFD -- right? -- when you write Internet 11:25AM</p> <p>24 standard, you try to abbreviate technologies, and, 11:25AM</p> <p>25 again, we can look at that document and confirm that's 11:25AM</p> <p style="text-align: right;">Page 74</p>	<p>1 this document, Exhibit 29? 11:27AM</p> <p>2 MR. NEUKOM: Objection; foundation. 11:27AM</p> <p>3 THE WITNESS: So I'm just reading page 1 -- or 11:27AM</p> <p>4 what you have in your bottom as 1557. Just below the 11:27AM</p> <p>5 RFC 791, it says, Replaces RFC 760, which generally 11:27AM</p> <p>6 implies there was prior work, which -- which his 11:27AM</p> <p>7 supersedes. 11:27AM</p> <p>8 BY MR. SILBERT: 11:28AM</p> <p>9 Q Okay. And forgive me if I've asked you this -- 11:28AM</p> <p>10 (Discussion off the stenographic record.) 11:28AM</p> <p>11 BY MR. SILBERT: 11:28AM</p> <p>12 Q I apologize if I've asked you this already, but 11:28AM</p> <p>13 have -- have you heard the Internet protocol abbreviated 11:28AM</p> <p>14 IP outside the context of Cisco? 11:29AM</p> <p>15 A As in what are the other possible abbreviations? 11:29AM</p> <p>16 For example, intellectual property we use "IP" term all 11:29AM</p> <p>17 the time. 11:29AM</p> <p>18 Q We do that too. No. 11:29AM</p> <p>19 My question is: Have you heard the abbreviation 11:29AM</p> <p>20 IP used to refer to the Internet protocol outside the 11:29AM</p> <p>21 context of Cisco? 11:29AM</p> <p>22 MR. NEUKOM: Objection; vague. 11:29AM</p> <p>23 THE WITNESS: So in -- in IETF -- as part of my 11:29AM</p> <p>24 role in IETF, people do loosely refer Internet Protocol 11:29AM</p> <p>25 Version 6 as "IP," as -- as one -- one of the variants. 11:29AM</p> <p style="text-align: right;">Page 76</p>
<p>1 true or not. I'm guessing it says Internet protocol and 11:25AM</p> <p>2 that abbreviates it as "IP," and the document refers to 11:25AM</p> <p>3 that so that you don't have to keep saying "Internet 11:25AM</p> <p>4 protocol" or "Internet Protocol Version 4." 11:25AM</p> <p>5 MR. NEUKOM: By the way, David, while you are 11:26AM</p> <p>6 getting a new document, just as a housekeeping matter, 11:26AM</p> <p>7 30 minutes or so ago I objected to a question you asked 11:26AM</p> <p>8 the witness on the basis of attorney-client privilege, 11:26AM</p> <p>9 and I meant to have objected on the basis of attorney 11:26AM</p> <p>10 work product. 11:26AM</p> <p>11 MR. SILBERT: Okay. 11:26AM</p> <p>12 MR. NEUKOM: So. 11:26AM</p> <p>13 BY MR. SILBERT: 11:26AM</p> <p>14 Q This is -- let me show you a document that's 11:26AM</p> <p>15 already been marked as Exhibit 29 in this case. 11:26AM</p> <p>16 Do you recognize this document? 11:26AM</p> <p>17 A Yes, I do. 11:27AM</p> <p>18 Q What is it? 11:27AM</p> <p>19 A This is an RFC which details the Internet 11:27AM</p> <p>20 protocol. 11:27AM</p> <p>21 Q And the publication date shown here is 11:27AM</p> <p>22 September 1981; correct? 11:27AM</p> <p>23 A Yes, that is correct. 11:27AM</p> <p>24 Q And was this, to your knowledge, the first 11:27AM</p> <p>25 version of the Internet protocol that's described in 11:27AM</p> <p style="text-align: right;">Page 75</p>	<p>1 There are, again, multiple ways to say that. 11:29AM</p> <p>2 BY MR. SILBERT: 11:29AM</p> <p>3 Q Have you heard the expression "TCP/IP"? 11:29AM</p> <p>4 A Yes, I have. 11:29AM</p> <p>5 Q Do you know what the IP stands for in that 11:29AM</p> <p>6 expression? 11:29AM</p> <p>7 A That is the Internet protocol. 11:30AM</p> <p>8 Q Okay. And that's the same Internet protocol that 11:30AM</p> <p>9 we have been discussing here this morning; correct? 11:30AM</p> <p>10 A Correct. 11:30AM</p> <p>11 Except in -- when you say "TCP/IP," it's probably 11:30AM</p> <p>12 a little broader because it does not imply which IP 11:30AM</p> <p>13 version you might be using. For example, you may be 11:30AM</p> <p>14 using IP with IP Version 6, or you may be using 11:30AM</p> <p>15 IP Version 4. It's a slightly broader term. 11:30AM</p> <p>16 Q Okay. I think you mentioned this previously, but 11:30AM</p> <p>17 before somebody came up with the expression "ip ospf 11:30AM</p> <p>18 authentication," Cisco used "IP" as a top-level keyword 11:30AM</p> <p>19 in other commands; correct? 11:30AM</p> <p>20 A That is correct. 11:30AM</p> <p>21 Q And so when someone came up with the expression 11:31AM</p> <p>22 "ip ospf authentication," they followed that same 11:31AM</p> <p>23 syntax; correct? 11:31AM</p> <p>24 MR. NEUKOM: Objection; vague. 11:31AM</p> <p>25 THE WITNESS: Authentication keyword, when it was 11:31AM</p> <p style="text-align: right;">Page 77</p>

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<p>1 introduced -- again, I'm trying to recollect from my 11:31AM</p> <p>2 20-year-old memory. IP OSPF existed in the sense that 11:31AM</p> <p>3 there were commands with IP OSPF some other options. It 11:31AM</p> <p>4 made sense to attach authentication to that chain 11:31AM</p> <p>5 already rather than sort of create something brand new. 11:31AM</p> <p>6 BY MR. SILBERT: 11:31AM</p> <p>7 Q Okay. And, in fact, if you look below -- looking 11:31AM</p> <p>8 still at Exhibit 54, if you look immediately below "ip 11:31AM</p> <p>9 ospf authentication," do you see the entry for "ip ospf 11:31AM</p> <p>10 authentication-key"? 11:32AM</p> <p>11 A Yes, I see that. 11:32AM</p> <p>12 Q And the -- if you look there, the date of the 11:32AM</p> <p>13 earliest-known document that's listed for that 11:32AM</p> <p>14 expression is 1993, which is five years or so earlier 11:32AM</p> <p>15 than the date listed for "ip ospf authentication"; is 11:32AM</p> <p>16 that correct? 11:32AM</p> <p>17 A That's what this document says, yes. 11:32AM</p> <p>18 Q Do you know what the person or persons who came 11:32AM</p> <p>19 up with the expression "ip ospf authentication" referred 11:32AM</p> <p>20 to when coming up with that expression? 11:32AM</p> <p>21 A Are you asking for the previous command, which is 11:32AM</p> <p>22 the "ip ospf authentication" -- 11:32AM</p> <p>23 Q Yes. 11:32AM</p> <p>24 A -- or the "key" command -- 11:32AM</p> <p>25 Q No. 11:32AM</p> <p style="text-align: right;">Page 78</p>	<p>1 A Yes. 11:34AM</p> <p>2 MR. NEUKOM: Objection; misstates prior 11:34AM</p> <p>3 testimony. 11:34AM</p> <p>4 THE WITNESS: Yes. I don't have, again, specific 11:34AM</p> <p>5 recollection of what sort of documentation or documents 11:34AM</p> <p>6 we wrote at that time. 11:34AM</p> <p>7 BY MR. SILBERT: 11:34AM</p> <p>8 Q Okay. We have talked a little bit about OSPF. 11:34AM</p> <p>9 There's an OSPF standard that's published by 11:34AM</p> <p>10 IETF; correct? 11:34AM</p> <p>11 MR. NEUKOM: Objection; vague. 11:34AM</p> <p>12 THE WITNESS: So OSPF is basically Open Shortest 11:34AM</p> <p>13 Path First. It's one of the routing protocols. OSPF 11:34AM</p> <p>14 has had multiple IETF standards published over time, and 11:34AM</p> <p>15 as we just saw, in the case of IP, sometimes the newer 11:35AM</p> <p>16 one deprecate the older one and so on, so there are 11:35AM</p> <p>17 multiple standards out there related to OSPF. 11:35AM</p> <p>18 MR. SILBERT: Okay. 11:35AM</p> <p>19 (Exhibit 56 was marked for 11:35AM</p> <p>20 identification by the Court Reporter.) 11:35AM</p> <p>21 BY MR. SILBERT: 11:35AM</p> <p>22 Q Mr. Roy, would you please look at Exhibit 56 and 11:36AM</p> <p>23 tell me if you recognize it. 11:36AM</p> <p>24 A Yes, I do. 11:36AM</p> <p>25 Q What is it? 11:36AM</p> <p style="text-align: right;">Page 80</p>
<p>1 A -- the previous -- okay. 11:32AM</p> <p>2 Q Yeah. 11:32AM</p> <p>3 A "Ip ospf authentication" referred to enabling the 11:32AM</p> <p>4 authentication features -- as we said, it could be 11:33AM</p> <p>5 clear text or it could be message digest -- on that 11:33AM</p> <p>6 interface. 11:33AM</p> <p>7 Q Yeah, I apologize because my question -- 11:33AM</p> <p>8 A Okay. 11:33AM</p> <p>9 Q -- wasn't clear. 11:33AM</p> <p>10 What I actually was trying to ask you was: Do 11:33AM</p> <p>11 you know what documents or source materials the people 11:33AM</p> <p>12 who came up with the expression "ip ospf authentication" 11:33AM</p> <p>13 referred to when naming that command? 11:33AM</p> <p>14 A So I can't tell you anything very specific, but 11:33AM</p> <p>15 what typically happens, I can say, is when you write a 11:33AM</p> <p>16 new command, of course, you will see source code 11:33AM</p> <p>17 changes, which looks like it refers to. You may also 11:33AM</p> <p>18 produce customer-facing documents. For example, we saw 11:33AM</p> <p>19 command reference where also this will get documented as 11:33AM</p> <p>20 what it does and what the syntax is and so on. 11:33AM</p> <p>21 Q Okay. And just to be clear, you are saying 11:33AM</p> <p>22 that's what typically happens because you don't know 11:34AM</p> <p>23 what the person or persons who named the command 11:34AM</p> <p>24 "ip ospf authentication" actually referred to when they 11:34AM</p> <p>25 named that command; is that correct? 11:34AM</p> <p style="text-align: right;">Page 79</p>	<p>1 A This is another of OSPF standards RFC, which 11:36AM</p> <p>2 specifies OSPF protocol, protocol specification. 11:36AM</p> <p>3 Q And this document states that it was published in 11:36AM</p> <p>4 October 1989; correct? 11:36AM</p> <p>5 A That is correct. 11:36AM</p> <p>6 Q And the author listed here is someone named 11:36AM</p> <p>7 J. Moy, M-o-y; is that correct? 11:36AM</p> <p>8 A Yes. John Moy was the author. 11:36AM</p> <p>9 Q And the company where he's listed as working is 11:36AM</p> <p>10 Proteon, Inc.; is that correct? 11:37AM</p> <p>11 A Correct, so at the time of publication of this 11:37AM</p> <p>12 document, he was employed by Proteon, Inc. 11:37AM</p> <p>13 Q Do you know Mr. Moy? 11:37AM</p> <p>14 A Yes, I do. 11:37AM</p> <p>15 Q Did he ever work for Cisco? 11:37AM</p> <p>16 A Not that I know of. 11:37AM</p> <p>17 Q This document, in its title, uses the acronym 11:37AM</p> <p>18 OSPF; correct? 11:37AM</p> <p>19 A Yes, it does. 11:37AM</p> <p>20 Q Who -- who came up with that acronym, to your 11:37AM</p> <p>21 knowledge? 11:37AM</p> <p>22 A So I think I'll give you the same answer I gave 11:37AM</p> <p>23 for BFD. If you move to the page 1, which is 2601 in 11:37AM</p> <p>24 the bottom-right label, and if you see Section 1, talks 11:37AM</p> <p>25 about the first time that abbreviation was introduced, 11:37AM</p> <p style="text-align: right;">Page 81</p>

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<p>1 and that's very typical in IETF standards, that the long 11:38AM</p> <p>2 things we create acronym at the first reference and 11:38AM</p> <p>3 continue to use it in this document. 11:38AM</p> <p>4 Q So my question is just this: So far as you know, 11:38AM</p> <p>5 someone outside of Cisco came up with the acronym OSPF; 11:38AM</p> <p>6 correct? 11:38AM</p> <p>7 A So IETF -- IETF products is a complicated 11:38AM</p> <p>8 process, and let me just give you a quick glimpse of it. 11:38AM</p> <p>9 What you are seeing is the finished product. 11:38AM</p> <p>10 which John Moy was the lead author and he took it to the 11:38AM</p> <p>11 RFC. 11:38AM</p> <p>12 What happened before that and how many versions 11:38AM</p> <p>13 were there and who are the people who sort of worked and 11:38AM</p> <p>14 collaborated to get to this stage, you can find that 11:38AM</p> <p>15 information, that -- how many earlier revisions of the 11:38AM</p> <p>16 drafts are there, who are the collaborator, where they 11:38AM</p> <p>17 worked for -- whichever companies they worked for, 11:39AM</p> <p>18 right? -- and how did they come to this. 11:39AM</p> <p>19 So it's hard to say, just looking at this, who 11:39AM</p> <p>20 came with this and who coined the term or who coined the 11:39AM</p> <p>21 acronym OSPF. 11:39AM</p> <p>22 Q Okay. But nevertheless, that acronym was in 11:39AM</p> <p>23 common usage before it was used by Cisco in a CLI 11:39AM</p> <p>24 command; correct? 11:39AM</p> <p>25 MR. NEUKOM: Objection; calls for opinion 11:39AM</p> <p style="text-align: right;">Page 82</p>	<p>1 A Yeah, I see that. 11:41AM</p> <p>2 Q What is an area data structure in OSPF? 11:41AM</p> <p>3 MR. NEUKOM: Objection; calls for opinion 11:41AM</p> <p>4 testimony. 11:41AM</p> <p>5 THE WITNESS: So "data structure" is -- is a 11:41AM</p> <p>6 computer science terminology which is how you store 11:41AM</p> <p>7 data, potentially, in a software implementation. 11:41AM</p> <p>8 "Area" is a concept introduced in this RFC 11:41AM</p> <p>9 which -- which refers to a collection of devices which 11:42AM</p> <p>10 have -- which are in the same area -- or who make a 11:42AM</p> <p>11 collective decision together by -- by knowing each 11:42AM</p> <p>12 other's state up front. 11:42AM</p> <p>13 So Internet data structure, I think, is going 11:42AM</p> <p>14 into, if you had such a collection of objects, these are 11:42AM</p> <p>15 the objects you probably want to keep in that collection 11:42AM</p> <p>16 of objects. 11:42AM</p> <p>17 BY MR. SILBERT: 11:42AM</p> <p>18 Q Okay. Okay. Would you look at two pages more 11:42AM</p> <p>19 at -- on the page that ends with the Bates No. 624. 11:42AM</p> <p>20 A Yes. 11:42AM</p> <p>21 Q And do you see the bolded term "authentication 11:42AM</p> <p>22 type"? It's in the top third -- 11:42AM</p> <p>23 A Yes, I see that. 11:42AM</p> <p>24 Q -- of the page? 11:42AM</p> <p>25 A Yeah, I see that. 11:42AM</p> <p style="text-align: right;">Page 84</p>
<p>1 testimony. 11:39AM</p> <p>2 THE WITNESS: So I don't know when Cisco 11:39AM</p> <p>3 implemented OSPF first, so it's hard to say what 11:39AM</p> <p>4 happened first. 11:39AM</p> <p>5 Again, a corollary comment, a lot of times Cisco 11:39AM</p> <p>6 is -- is the driver of technologies, and we implement 11:39AM</p> <p>7 things, and then we publish standards off it, so there 11:39AM</p> <p>8 could be a coincidence where it has been used in Cisco 11:39AM</p> <p>9 before or -- or in a standard document before -- again, 11:39AM</p> <p>10 I don't know enough history on this that what happened 11:40AM</p> <p>11 when. 11:40AM</p> <p>12 BY MR. SILBERT: 11:40AM</p> <p>13 Q Okay. You are going to agree with me, though, I 11:40AM</p> <p>14 think, that the standard itself uses the acronym OSPF; 11:40AM</p> <p>15 right? 11:40AM</p> <p>16 A The document does create the acronym for the use 11:40AM</p> <p>17 for the document. 11:40AM</p> <p>18 Q Okay. Would you turn to the page that ends in 11:40AM</p> <p>19 the Bates No. 622? 11:40AM</p> <p>20 MR. NEUKOM: Sorry, what page, David? 11:40AM</p> <p>21 MR. SILBERT: Bates No. 622. 11:40AM</p> <p>22 MR. NEUKOM: Okay. Thank you. 11:41AM</p> <p>23 BY MR. SILBERT: 11:41AM</p> <p>24 Q Do you see Section 6 that's with the heading "The 11:41AM</p> <p>25 Area Data Structure"? 11:41AM</p> <p style="text-align: right;">Page 83</p>	<p>1 Q Under the OSPF standard, does an operator specify 11:42AM</p> <p>2 the authentication type to be used for an area? 11:43AM</p> <p>3 MR. NEUKOM: Objection; vague, calls for opinion 11:43AM</p> <p>4 testimony. 11:43AM</p> <p>5 THE WITNESS: So as per this document, what was 11:43AM</p> <p>6 described here is in a area you could specify if 11:43AM</p> <p>7 authentication is in use, and I think it also refers to 11:43AM</p> <p>8 this other section where you can find details of what 11:43AM</p> <p>9 types of authentication, Appendix E. 11:43AM</p> <p>10 As a -- as an operator, you may or may not choose 11:43AM</p> <p>11 to have authentication. That is totally up to you. If 11:43AM</p> <p>12 you think your network is very secure, you may choose to 11:43AM</p> <p>13 not have authentication. If you really want to secure 11:43AM</p> <p>14 your network, there are a variety of ways to 11:43AM</p> <p>15 authenticate it, and this just refers to that -- what 11:43AM</p> <p>16 mechanisms exist at the area level. 11:44AM</p> <p>17 BY MR. SILBERT: 11:44AM</p> <p>18 Q Okay. And would you agree that authentication is 11:44AM</p> <p>19 a concept that's introduced in this OSPF specification? 11:44AM</p> <p>20 MR. NEUKOM: Objection; calls for opinion 11:44AM</p> <p>21 testimony and vague. 11:44AM</p> <p>22 THE WITNESS: This document has used the term 11:44AM</p> <p>23 "authentication," but basically what we are talking 11:44AM</p> <p>24 about is: Are there ways -- are there ways to validate? 11:44AM</p> <p>25 Are there ways to secure communication between devices? 11:44AM</p> <p style="text-align: right;">Page 85</p>

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1	MR. SILBERT: Okay. We need to change the tape, 11:44AM	1	Q -- there is a bold entry "authentication type." 12:25PM
2	so we will have to pause there. 11:44AM	2	Do you see that? 12:25PM
3	THE VIDEOGRAPHER: This marks the end of 11:44AM	3	A Yes. 12:25PM
4	Volume 1, Media No. 1 of the deposition of Abhay Roy. 11:44AM	4	Yeah, so what -- what that -- in the -- what 12:25PM
5	The time is 11:44 a.m. We are off the record. 11:44AM	5	is -- what it's trying to say in the RFC is if you have 12:25PM
6	(Lunch recess taken.) 11:44AM	6	for area some objects -- one of the objects is the 12:25PM
7	---o0o--- 11:44AM	7	authentication type. That's what that document is 12:25PM
8	11:44AM	8	talking about. 12:25PM
9		9	Q And the -- the document is getting at the idea 12:25PM
10		10	that an operator can set the authentication type for 12:25PM
11		11	objects in an area; correct? 12:25PM
12		12	MR. NEUKOM: Objection; document speaks for 12:25PM
13		13	itself, calls for opinion testimony. 12:25PM
14		14	THE WITNESS: Yeah, so document is talking about, 12:26PM
15		15	at the area scope, if you support authentication, you 12:26PM
16		16	probably want to store objects related to the 12:26PM
17		17	authentication in that type of data store. 12:26PM
18		18	BY MR. SILBERT: 12:26PM
19		19	Q Okay. So looking at the command "ip ospf 12:26PM
20		20	authentication," the term "ip" in that command refers to 12:26PM
21		21	the Internet protocol standard; right? 12:26PM
22		22	MR. NEUKOM: Objection; misstates prior 12:26PM
23		23	testimony. 12:26PM
24		24	THE WITNESS: "ip" in that command refers to 12:26PM
25		25	Internet Protocol Version 4. 12:26PM
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1	AFTERNOON SESSION 12:24 P.M. 11:44AM	1	BY MR. SILBERT: 12:26PM
2	12:24PM	2	Q Okay. And that's a standard that's published by 12:26PM
3	THE VIDEOGRAPHER: We are back on the record at 12:24PM	3	the IETF; correct? 12:26PM
4	12:24 p.m. 12:24PM	4	A Internet protocol is an RFC 791, which is 12:26PM
5	This marks the beginning of Volume 1, Media No. 2 12:24PM	5	published by the IETF, yes. 12:26PM
6	of the deposition of Abhay Roy. 12:24PM	6	Q Right. 12:27PM
7	Please continue. 12:24PM	7	And -- and 791 might be an earlier version, but 12:27PM
8	BY MR. SILBERT: 12:24PM	8	are you aware that there's a separate RFC that's a 12:27PM
9	Q Good afternoon, Mr. Roy. 12:24PM	9	standard for Internet Protocol 4? 12:27PM
10	Before the lunch break, we were talking about the 12:24PM	10	A I don't know exactly if -- if there is a one -- 12:27PM
11	command "ip ospf authentication." 12:24PM	11	there is a version later than this which supersedes 12:27PM
12	Do you recall that? 12:24PM	12	this -- 12:27PM
13	A Yes, I do. 12:24PM	13	Q Okay. 12:27PM
14	Q Do you agree that authentication is a parameter 12:24PM	14	A -- but there might be; might not be not aware. 12:27PM
15	that's introduced in the OSPF specification? 12:24PM	15	Q Okay. And in the command "ip ospf 12:27PM
16	MR. NEUKOM: Objection; vague, calls for opinion. 12:24PM	16	authentication," "ospf" refers to the OSPF 12:27PM
17	THE WITNESS: I think you referred me to some 12:24PM	17	specification, Exhibit 56; correct? 12:27PM
18	section. Could you point me to that again? 12:24PM	18	MR. NEUKOM: Objection; misstates prior 12:27PM
19	MR. SILBERT: Yeah. We were looking at the page 12:24PM	19	testimony. 12:27PM
20	that ends in Bates No. 624 in Exhibit 56, which is the 12:24PM	20	THE WITNESS: So OSPF command -- or this command, 12:27PM
21	OSPF specification dated October 1989. 12:25PM	21	which is in Cisco's implementation, refers to the 12:27PM
22	THE WITNESS: Was that 624? 12:25PM	22	protocol called "OSPF," which is documented in an IETF 12:27PM
23	MR. SILBERT: Yes. 12:25PM	23	stand -- IETF RFC. 12:28PM
24	Q Yeah, in the top third of the page -- 12:25PM	24	BY MR. SILBERT: 12:28PM
25	A Oh, yes. Yes. Sorry, my bad. 12:25PM	25	Q Okay. And in the term "ip ospf authentication," 12:28PM
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1 A If you saw a complete reference of OSPF 12:33PM	1 A-c-e-e, Lindem, L-i-n-d-e-m, but I'm not 100 percent 12:37PM
2 configuration on a device, we could find it from there. 12:33PM	2 sure if he was still on that team or he left Cisco by 12:37PM
3 Q What would I look for to find it? 12:33PM	3 that time. 12:37PM
4 A You could search for keywords like "area" or 12:33PM	4 Q Okay. Can you remember any other names of people 12:37PM
5 "authentication." 12:33PM	5 who were on the team? 12:37PM
6 Q Okay. Who else was on the team who came up with 12:33PM	6 A Nothing is coming to my head. 12:37PM
7 the command "ip ospf authentication"? 12:33PM	7 Q Okay. Referring back to Exhibit 54, would you 12:38PM
8 A So I'm trying to recollect who all were part of 12:34PM	8 please turn to page 12. 12:38PM
9 the OSPF team. There were probably a small set of 12:34PM	9 A Yeah, I'm there. 12:38PM
10 people. 12:34PM	10 Q In the bottom third of the page, do you see the 12:38PM
11 Are you looking for specific names? 12:34PM	11 command expression "ip ospf bfd"? 12:38PM
12 Q Yes. 12:34PM	12 A Yes. 12:38PM
13 A One person I could think of is Derek Yeung. 12:34PM	13 Q Okay. And then in the next column with the 12:38PM
14 Q Can you spell that, please. 12:34PM	14 heading "Author/Originator Information," it says "Cisco" 12:38PM
15 A Actually, he calls himself Derek, but the -- 12:34PM	15 and your name; correct? 12:38PM
16 okay. D-r-e-k [sic] and Yeung is Y-e-u-n-g. 12:34PM	16 A Yes. 12:38PM
17 Q Okay. 12:34PM	17 Q Did you come up with the expression "ip ospf 12:38PM
18 A He was -- he was one of the senior guys in the 12:34PM	18 bfd"? 12:38PM
19 team. 12:34PM	19 A Yeah, so BFD -- I was the lead implementer of it 12:38PM
20 Who were other people around that time. There 12:34PM	20 and very likely I proposed the -- the command. 12:39PM
21 was -- there was somebody called Padma, P-a-d-m-a. Her 12:34PM	21 Q Okay. And you say very likely you proposed the 12:39PM
22 last name was Esnault, E-s-n-a-u-l-t. And these two 12:34PM	22 command. 12:39PM
23 names I can remember very clearly. There may be more 12:35PM	23 Do you have any recollection of doing that? 12:39PM
24 people who were part of the OSPF team at that time. 12:35PM	24 A I don't remember anybody else worked on it, so 12:39PM
25 Q Is that the best recollection you have, as you 12:35PM	25 I -- I proposed the command. Yeah, I think I proposed 12:39PM
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1 sit here today, of who else was on the team that came up 12:35PM	1 the command. I don't think there was anybody else on 12:39PM
2 with the command "ip ospf authentication"? 12:35PM	2 this project. 12:39PM
3 A Yes. 12:35PM	3 Q Okay. And I appreciate your reasons for saying 12:39PM
4 Q Okay. Who else was on the team that came up with 12:35PM	4 that, but my question is: Do you have any recollection 12:39PM
5 the command "bfd all-interfaces"? 12:35PM	5 of proposing this command "ip ospf bfd"? 12:39PM
6 A That was on page 3? 12:35PM	6 A Yes. 12:39PM
7 Q Correct. 12:35PM	7 MR. NEUKOM: Objection; asked and answered. 12:39PM
8 MR. NEUKOM: Page 3 of Exhibit 54. 12:35PM	8 BY MR. SILBERT: 12:39PM
9 THE WITNESS: This is actually much later than 12:36PM	9 Q What's your recollection? 12:39PM
10 that, so this -- I'm just going with the date, which is 12:36PM	10 A I remember the document which described this, and 12:39PM
11 also listed here, 2004 to 2005. We had different 12:36PM	11 I think I was -- I was the author of the document. It's 12:39PM
12 engineers around that time on those PF [phonetic] team. 12:36PM	12 a small amount of work. And generally what happens is 12:39PM
13 Couple names I can recollect. One was Liem, L-i-e-m, 12:36PM	13 if there is large project, you have a larger group of 12:39PM
14 and Nguyen, N-g-y-u-e-n, I think. Last name may have 12:36PM	14 people who work on the project. For smaller ones, you 12:40PM
15 spelled incorrectly. Another engineer was Peter, 12:36PM	15 are the sole implementer, so you pretty much do most of 12:40PM
16 P-e-t-e-r, Psenak, P-s-e-n-a-k. There are probably more 12:36PM	16 the work, all the way from designing the command and the 12:40PM
17 names, but those are a couple of names. 12:37PM	17 implementation. This was another smaller features. 12:40PM
18 BY MR. SILBERT: 12:37PM	18 Q Okay. The term "ip" in the command "ip ospf bfd" 12:40PM
19 Q Okay. Are you able to tell me any other names of 12:37PM	19 refers to the Internet protocol standard that's 12:40PM
20 people who are on the team who named the command 12:37PM	20 specified by the IETF; correct? 12:40PM
21 "bfd all-interfaces"? 12:37PM	21 A "ip" in this command refers to Internet Protocol 12:40PM
22 A Yeah, I don't recall any more specific names. I 12:37PM	22 Version 4, which is documented in RFC 791, and there 12:40PM
23 mean, there are people around that time, but I want to 12:37PM	23 might be further revisions of it, if not. 12:40PM
24 make sure that they were in Cisco at that time. 12:37PM	24 Q Okay. And the term "ospf" in the command 12:40PM
25 For example, there is one engineer called Acee, 12:37PM	25 "ip ospf bfd" refers to the OSPF standard that's 12:40PM
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<p>1 specified by the IETF; correct? 12:40PM</p> <p>2 A Yes. 12:40PM</p> <p>3 MR. NEUKOM: Objection; misstates prior 12:41PM</p> <p>4 testimony, calls for opinion. 12:41PM</p> <p>5 THE WITNESS: The OSPF acronym we have used is 12:41PM</p> <p>6 for Open Shortest Path First protocol, which is also 12:41PM</p> <p>7 described and captured in RFC. 12:41PM</p> <p>8 BY MR. SILBERT: 12:41PM</p> <p>9 Q Okay. And the -- the term "bfd" in the command 12:41PM</p> <p>10 "ip ospf bfd" refers to the BFD standard that's 12:41PM</p> <p>11 specified by the IETF; correct? 12:41PM</p> <p>12 A BFD acronym stands for Bidirectional Forwarding 12:41PM</p> <p>13 Detection, which is -- which is, yes, also captured in 12:41PM</p> <p>14 IETF RFC. 12:41PM</p> <p>15 Q And the BFD standard itself describes using BFD 12:41PM</p> <p>16 with OSPF; is that correct? 12:41PM</p> <p>17 MR. NEUKOM: Objection; document calls for its -- 12:41PM</p> <p>18 pardon me. Document speaks for itself, calls for 12:42PM</p> <p>19 opinion testimony. 12:42PM</p> <p>20 THE WITNESS: BFD spec -- again, my recollection 12:42PM</p> <p>21 is BFD spec was written in a more generic sense. It may 12:42PM</p> <p>22 or may not have explicitly called out how and which 12:42PM</p> <p>23 protocols you can -- you can make use of it, but, again, 12:42PM</p> <p>24 if you have some more text, I can look into it. 12:42PM</p> <p>25 // 12:42PM</p> <p style="text-align: right;">Page 98</p>	<p>1 the OSPF standard, a newer version than what you have 12:45PM</p> <p>2 shown me, and it talks about if you are compliant to 12:45PM</p> <p>3 that version, that implementation could use BFD 12:45PM</p> <p>4 services. 12:45PM</p> <p>5 BY MR. SILBERT: 12:45PM</p> <p>6 Q Okay. What resources did you use when naming the 12:45PM</p> <p>7 "ip ospf bfd" command? 12:46PM</p> <p>8 MR. NEUKOM: Objection; vague. 12:46PM</p> <p>9 THE WITNESS: By "resources" you are implying 12:46PM</p> <p>10 what type of material documents, those kind of things? 12:46PM</p> <p>11 MR. SILBERT: Correct. 12:46PM</p> <p>12 THE WITNESS: I had looked at the specification, 12:46PM</p> <p>13 of course. It -- I don't know if it was this version or 12:46PM</p> <p>14 if it was an earlier version of -- of the BFD protocol 12:46PM</p> <p>15 specification, and beyond that, it may have been some 12:46PM</p> <p>16 conversation about who wants it, but I don't have any 12:46PM</p> <p>17 specific recollection was there a formal Product 12:46PM</p> <p>18 Requirement Document also written with it. 12:46PM</p> <p>19 BY MR. SILBERT: 12:46PM</p> <p>20 Q What do you mean when you say "some conversation 12:47PM</p> <p>21 about who wants it"? 12:47PM</p> <p>22 A Yes. As I was saying earlier, most of the things 12:47PM</p> <p>23 we implement are of two categories, typically. 12:47PM</p> <p>24 One is customer-driven, which is, you are talking 12:47PM</p> <p>25 to certain customers. They are telling you they want 12:47PM</p> <p style="text-align: right;">Page 100</p>
<p>1 (Exhibit 57 was marked for 12:42PM</p> <p>2 identification by the Court Reporter.) 12:43PM</p> <p>3 BY MR. SILBERT: 12:43PM</p> <p>4 Q Mr. Roy, would you please look at Exhibit 57 and 12:43PM</p> <p>5 tell me if you recognize it. 12:43PM</p> <p>6 A Yes, I do. 12:43PM</p> <p>7 Q What is it? 12:44PM</p> <p>8 A This is an RFC which describes the base protocol 12:44PM</p> <p>9 for bidirectional detection. 12:44PM</p> <p>10 Q Would you look, please, at the page that ends 12:44PM</p> <p>11 with the Bates No. 760. 12:44PM</p> <p>12 A Yes, I'm there. 12:44PM</p> <p>13 Q Do you see Section 3.1? Towards the bottom of 12:44PM</p> <p>14 that section in that single paragraph, it says, "For 12:44PM</p> <p>15 example, an OSPF... implementation may request a BFD 12:44PM</p> <p>16 session to be established to a neighbor discovered using 12:44PM</p> <p>17 the OSPF Hello protocol." 12:44PM</p> <p>18 Do you see that? 12:44PM</p> <p>19 A Yes, I see that. 12:44PM</p> <p>20 Q And that sentence is describing using BFD with 12:44PM</p> <p>21 OSPF; correct? 12:45PM</p> <p>22 MR. NEUKOM: Objection; document speaks for 12:45PM</p> <p>23 itself, and to the extent it doesn't, calls for opinion 12:45PM</p> <p>24 testimony. 12:45PM</p> <p>25 THE WITNESS: Yeah, it -- so this does reference 12:45PM</p> <p style="text-align: right;">Page 99</p>	<p>1 this type of technology. Then you try to build that 12:47PM</p> <p>2 technology. 12:47PM</p> <p>3 Or they are innovation-driven, which is we want 12:47PM</p> <p>4 to showcase some new things which we have built, and 12:47PM</p> <p>5 they are more outwards. 12:47PM</p> <p>6 In the latter, you will not have a customer 12:47PM</p> <p>7 requirement document -- or Product Requirement Document 12:47PM</p> <p>8 because there is -- nobody has requested at this point 12:47PM</p> <p>9 versus, in the former case, you will have some level of 12:47PM</p> <p>10 conversation, communication, or perhaps a more formal 12:47PM</p> <p>11 document which describes what a customer really intends 12:47PM</p> <p>12 to do. 12:47PM</p> <p>13 Q In the case of customer-driven developments, do 12:47PM</p> <p>14 customers ever suggest CLI commands? 12:48PM</p> <p>15 MR. NEUKOM: Objection; vague, compound, phrased 12:48PM</p> <p>16 in the subjunctive. 12:48PM</p> <p>17 MR. SILBERT: Now you got me. 12:48PM</p> <p>18 THE WITNESS: Is that -- is that in reference to 12:48PM</p> <p>19 this command in particular, or is it -- 12:48PM</p> <p>20 MR. SILBERT: No. I was asking you more 12:48PM</p> <p>21 generally. 12:48PM</p> <p>22 THE WITNESS: Okay. You are asking for my 12:48PM</p> <p>23 opinion? 12:48PM</p> <p>24 MR. SILBERT: I'm asking for your personal 12:48PM</p> <p>25 knowledge. 12:48PM</p> <p style="text-align: right;">Page 101</p>

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<p>1 A So -- 04:46PM</p> <p>2 Q Thank you. 04:46PM</p> <p>3 A -- so the enclosure title "Description" was 04:46PM</p> <p>4 written by Friedman, and this describes what he has 04:46PM</p> <p>5 suggested, so I'm basing on this document. 04:47PM</p> <p>6 Q Okay. Other than what you read in that document, 04:47PM</p> <p>7 do you know anything else about the origination of the 04:47PM</p> <p>8 command expression "ip ospf authentication"? 04:47PM</p> <p>9 A No. 04:47PM</p> <p>10 MR. SILBERT: Okay. Then thank you. At this 04:47PM</p> <p>11 point, again, subject to any redirect based on 04:47PM</p> <p>12 questioning by your counsel, I thank you very much for 04:47PM</p> <p>13 your time and attention, and I'm concluding the 04:47PM</p> <p>14 deposition. 04:47PM</p> <p>15 THE WITNESS: Sure. Thanks. 04:47PM</p> <p>16 MR. NEUKOM: No direct. 04:47PM</p> <p>17 THE VIDEOGRAPHER: Okay. 04:47PM</p> <p>18 MR. NEUKOM: At this time. 04:47PM</p> <p>19 THE VIDEOGRAPHER: This concludes today's 04:47PM</p> <p>20 deposition of Abhay Roy. The number of media used was 04:47PM</p> <p>21 three and will be retained by Veritext Legal Solutions. 04:47PM</p> <p>22 The time is 4:47 p.m. We are off the record. 04:47PM</p> <p>23 (TIME NOTED: 4:47 P.M.)</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 230</p>	<p>1</p> <p>2</p> <p>3 I, the undersigned, a Certified Shorthand</p> <p>4 Reporter of the State of California, do hereby certify:</p> <p>5 That the foregoing proceedings were taken before</p> <p>6 me at the time and place herein set forth; that any</p> <p>7 witnesses in the foregoing proceedings, prior to</p> <p>8 testifying, were placed under oath; that a verbatim</p> <p>9 record of the proceedings was made by me using machine</p> <p>10 shorthand which was thereafter transcribed under my</p> <p>11 direction; further, that the foregoing is an accurate</p> <p>12 transcription thereof.</p> <p>13 I further certify that I am neither financially</p> <p>14 interested in the action nor a relative or employee of</p> <p>15 any attorney or any of the parties.</p> <p>16 IN WITNESS WHEREOF, I have this date subscribed</p> <p>17 my name.</p> <p>18</p> <p>19 Dated: December 30, 2015</p> <p>20</p> <p>21</p> <p>22</p> <p>23 <%signature%></p> <p>24 RACHEL FERRIER</p> <p>25 CSR No. 6948</p> <p style="text-align: right;">Page 232</p>
<p>1 I, ABHAY ROY, do hereby declare under penalty</p> <p>2 of perjury that I have read the foregoing transcript;</p> <p>3 that I have made any corrections as appear noted, in</p> <p>4 ink, initialed by me, or attached hereto; that my</p> <p>5 testimony as contained herein, as corrected, is true and</p> <p>6 correct.</p> <p>7 EXECUTED this ____ day of _____,</p> <p>8 2015, at _____,</p> <p>9 (City) (State)</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17 ABHAY ROY</p> <p>18 VOLUME 1</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 231</p>	

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

- - - - - x Case No.
: 5:14-cv-05344-BLF (PSG)
:
CISCO SYSTEMS, INC., :
:
Plaintiff, :
:
vs. :
:
ARISTA NETWORKS, INC., :
:
Defendant. :
:
- - - - - x

VIDEOTAPED DEPOSITION OF GREG SATZ
March 23, 2016
HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY
VOLUME 1

Reported by
Brooke R. Bohr
CSR No. 753
Job No 2272380
Pages 1 - 168

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<p>1 VIDEOTAPED DEPOSITION OF GREG SATZ, 2 taken at the instance of the Defendant, at the 3 offices of TUCKER & ASSOCIATES, 605 W. Fort 4 Street, in the City of Boise, State of Idaho, 5 commencing at 10:10 a.m., on March 23, 2016, 6 before Brooke R. Bohr, CSR, RPR, a Notary Public 7 in and for the State of Idaho, pursuant to notice, 8 and in accordance with the applicable Rules of 9 Civil Procedure.</p> <p>10 11 A P P E A R A N C E S 12 FOR PLAINTIFF 13 John M. Neukom, Esq. 14 QUINN EMAMUEL URQUHART & SULLIVAN LLP 15 50 California Street, 22nd Floor 16 San Francisco, CA 94111 17 (415) 875-6320 18 johnneukom@quinnemanuel.com 19 FOR DEFENDANT 20 Brian L. Ferrall, Esq. 21 KEKER & VAN NEST LLP 22 633 Battery Street 23 San Francisco, CA 94111 24 (415) 391-5400 25 bferrall@kvn.com</p> <p style="text-align: right;">Page 2</p>	<p>1 BOISE, IDAHO 2 March 23, 2016, 10:10 a.m. 3 4 THE VIDEOGRAPHER: We are now on the record. 5 Please note that the microphones are 6 sensitive and may pick up whispering and private 7 conversations. Please turn off all cell phones or 8 place them away from the microphones as they can 9 interfere with the deposition audio. Recording 10 will continue until all parties agree to go off 11 record. 12 My name is David Cromwell, representing 13 Veritext. The date today is March 23, 2016, and 14 the time is approximately 10:10 a.m. This 15 deposition is being held at Tucker & Associates 16 located at 605 West Fort Street, Boise, Idaho 17 83702, and is being taken by counsel for the 18 defendant. 19 The caption of this case is Cisco 20 Systems, Inc. v. Arista Networks, Inc. This case 21 is filed in the United States District Court, 22 Northern District of California, San Jose 23 Division, Case No. 5:14-CV-05344-BLF PSG. The 24 name of the witness is Greg Satz. 25 At this time, the attorneys present in</p> <p style="text-align: right;">Page 4</p>
<p>1 W I T N E S S 2 GREG SATZ Page: 3 Examination by Mr. Ferrall 5 4 Examination by Mr. Neukom 151 5 Further Examination by Mr. Ferrall 158 6 7 * * * * * 8 E X H I B I T S 9 10 Page: 11 Exhibit 400 Greg Satz LinkedIn 13 12 Exhibit 401 "TOPS-20 DECnet-20 Programmers 22 13 Guide and Operations Manual" 14 Exhibit 402 One-page Document with 36 15 Bates No. KL-883 16 Exhibit 403 Document Beginning Bates No. 69 17 ARISTANDCA00022465 18 Exhibit 404 Document Beginning Bates No. 84 19 CSI-CLI-00359132 20 Exhibit 405 One-page Document Bates No. 106 21 CSI-CLI-00746924 22 Exhibit 406 Document Bates No. CSI-CLI-01828732 112 23 Through Bates No. CSI-CLI-01828783 24 Exhibit 407 Document Beginning Bates No. 141 25 CSI-CLI-01295215 * * * * *</p> <p style="text-align: right;">Page 3</p>	<p>1 the room will identify themselves and the parties 2 they represent. 3 MR. FERRALL: Brian Ferrall of Keker & 4 Van Nest on behalf of Arista Networks. 5 MR. NEUKOM: John Neukom for the plaintiff. 6 THE COURT: Our court reporter, Brooke Bohr, 7 representing Veritext, will swear in the witness, 8 and we can proceed. 9 10 GREG SATZ, 11 produced as a witness at the instance of the 12 Defendant, having been first duly sworn, was 13 examined and testified as follows: 14 15 EXAMINATION 16 BY MR. FERRALL: 17 Q. Good morning, Mr. Satz. Can you please 18 state your full name. 19 A. Greg Leonard Satz. 20 Q. Mr. Satz, you are not represented by 21 counsel today; is that right? 22 A. Correct. 23 Q. Have you ever been deposed before? 24 A. I have. 25 Q. All right. So you know the basic</p> <p style="text-align: right;">Page 5</p>

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<p>1 There was a proper format and an improper format 2 based on the syntax. 3 But it's -- we're really in the weeds 4 now. 5 Q. BY MR. Ferrall: Well, are you familiar 6 with -- we talked about show commands, right? 7 A. Um-hum. 8 Q. Are you familiar with either TOPS-20 or 9 other operating systems having show commands with 10 different level -- multiple levels of hierarchy to 11 them? 12 A. Sure. 13 MR. NEUKOM: Objection; compound. 14 Q. BY MR. FERRALL: Can you give me any 15 examples of -- 16 A. No. 17 Q. Okay. Well, let me ask you to look 18 at -- 19 A. I think the -- you can actually 20 download a version of TOPS-20 and run it on your 21 phone. 22 Q. On my phone? Wow. Probably -- 23 A. Which I would encourage you to do. 24 Q. Were you familiar with something called 25 the "NCP" or --</p> <p style="text-align: right;">Page 42</p>	<p>1 such a generic function. 2 Q. Um-hum. 3 A. But I don't have a clear, I'm typing at 4 a screen at a prompt and these are coming out. 5 Q. Okay. And do you understand, under 6 show status, if you go one column over -- 7 A. Um-hum. 8 Q. -- there are some other words there, 9 NCP request, known, line, local? 10 A. Um-hum. 11 Q. Do you understand how those work? 12 A. Sure. 13 Q. How would those work with a show status 14 command, for example? 15 A. You mean from a parsing point of view 16 or from how -- what they actually do inside the 17 code as a function? Because, again, it is those 18 levels. 19 Q. Yeah. I mean as in terms of -- 20 A. You know, what NCP request actually 21 does in the code as a function and the information 22 it returns is different than the detail of 23 actually grabbing the keyword NCP request. 24 Q. Okay. I guess my first question, then, 25 about this is how -- how would the parser handle</p> <p style="text-align: right;">Page 44</p>
<p>1 A. Oh, the DECnet configuration? 2 Q. -- the Network Control Program? 3 A. Vaguely. I mean, I -- at one point, I 4 used it. I don't remember it. 5 Q. Okay. All right. 6 A. We could look in the manual if you want 7 to talk about it. 8 Q. Well, if you could look at Exhibit 401. 9 A. I mean, it's -- this is some old stuff. 10 Q. On -- the section on NCP begins 11 around -- I guess it's Chapter 6. 12 A. Okay. 13 Q. 6-2. But my question will go to 14 Table 6-1, which is on Page 6-12. 15 A. Um-hum. 16 Q. So let me just ask you if you -- are 17 you looking at that table on 6-12? 18 A. I am. 19 Q. Okay. And if we just focus on the show 20 commands there, do you see those? 21 A. I do. 22 Q. And are those ones that are familiar or 23 at least dust off your memory? 24 A. No. I can say I do not -- I am sure I 25 have used show status quite a bit because that's</p> <p style="text-align: right;">Page 43</p>	<p>1 these different keywords following show status? 2 MR. NEUKOM: Objection; foundation, phrased 3 in a hypothetical, and calls for opinion 4 testimony. 5 THE WITNESS: No different than if it 6 parsed A, B or C in an order. It is just a token. 7 Just a series of descriptions that permit what is 8 acceptable in a particular field. 9 So in this particular case, it is 10 looking for the letters S-H-O-W, followed by some 11 sort of space or command termination or break, 12 looking for another keyword the same way. Looking 13 for a third keyword. When it completes, it gets 14 down to what might be called a terminal condition 15 because it says, okay, I've completed this parse, 16 the parse is successful, now go perform something, 17 which would -- the interesting part, which is pull 18 out the NCP request data from the operating system 19 or networking kernel and then display it somehow. 20 Q. BY MR. Ferrall: And were you ever 21 aware of operating systems growing their command 22 list in a way where they would -- they would add, 23 for example, further options under the show 24 command over time in subsequent versions? 25 A. Oh, yes.</p> <p style="text-align: right;">Page 45</p>

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<p>1 MR. NEUKOM: Objection; vague and compound. 2 THE WITNESS: They would augment the command 3 set, the features, and there was, typically, a 4 user interface component to it, like modifying the 5 menu commands on your laptops today. 6 Q. BY MR. FERRALL: And was there -- would 7 they, typically, build upon existing keywords? 8 MR. NEUKOM: Same objections, and calls for 9 speculation. 10 THE WITNESS: Depending on the feature set. 11 If it was an extension of an existing feature set 12 or if it was brand new. I mean, as you described 13 a tree, those trees can be rearranged and 14 augmented or removed. 15 MR. FERRALL: Okay. Why don't we take our 16 first break. We've been going for about an hour. 17 THE WITNESS: Okay. 18 THE VIDEOGRAPHER: The time is 11:12 a.m. 19 Off the record. 20 (Recess taken.) 21 THE VIDEOGRAPHER: The time is 11:23 a.m. 22 On the record. 23 Q. BY MR. FERRALL: Mr. Satz, are you 24 familiar with any use of a "clear" command from 25 either TOPS-20 or early operating systems?</p> <p style="text-align: right;">Page 46</p>	<p>1 A. Um-hum. 2 Q. And a normal mode, I think. What were 3 the other modes of TOPS-20 that you could recall? 4 A. They weren't necessarily modes, as -- 5 you might think of them as different parse trees, 6 to use your tree analogy. They were command sets 7 that would be made available or not available 8 depending on, in the case of privilege mode, 9 having a password. So you had to know the secret 10 code to then enable the parse tree that was called 11 privilege mode. 12 Q. Was there a different prompt 13 indicator -- 14 A. There is. 15 Q. -- for the different command sets that 16 were available, if you will? 17 A. Yes. And TOPS-20 -- and I think VMS 18 used the same mode -- had a subcommand mode. So 19 you could -- I don't know if you would put a comma 20 at the end of the line or if it was just a -- it 21 knew you were going into the mode. I can't -- I 22 don't remember anymore. But it would then 23 double-prompt you. So if your prompt was, like, a 24 dollar sign, it would give you two dollar signs to 25 know you were in the subcommand mode. Or in the</p> <p style="text-align: right;">Page 48</p>
<p>1 A. I can't say I recall that. 2 Q. Okay. 3 A. There could have been, but there's a 4 check through the documentation better than my 5 memory. 6 Q. Okay. How about a "set" command? 7 A. I'm pretty sure VMS had set, as well as 8 TOPS-20. 9 Q. Now, you're aware that Cisco later used 10 show commands, right? 11 A. (Witness nods head.) 12 Q. What was the purpose of the Cisco show 13 commands, in general? I know there were many. 14 MR. NEUKOM: Objection; vague and compound. 15 THE WITNESS: To take data from inside the 16 software and present it to a user. 17 Q. BY MR. FERRALL: Were you aware of a 18 feature of TOPS-20 called "exec," E-X-E-C? 19 A. Um-hum. Yes. 20 Q. What was that? 21 A. The exec was the piece of software in 22 the operating system who interacted with the user 23 and contained the parser. 24 Q. We talked earlier about a privilege 25 mode in TOPS-20.</p> <p style="text-align: right;">Page 47</p>	<p>1 privilege mode it would change the prompt from a 2 single dollar sign to, like, an "at" sign or a 3 "pound" sign. It would give you indication. And 4 usually there were ways to configure that so you 5 could tell it what you wanted it to do. 6 Q. And I think you said that you would 7 need a password, for example, to enter the 8 privilege mode? 9 A. In the ether TIP or the router software 10 that Cisco used. In TOPS-20 it was whether you 11 had a capability, you had an account that was 12 privileged. 13 Q. Was there a command or a -- something 14 you would enter in order to switch modes in 15 TOPS-20? 16 A. That was "enable." 17 Q. "Enable" was the command? 18 A. (Witness nods head.) 19 Q. Okay. 20 A. The magic word. All these commands are 21 are just a magic word that you agree will do a 22 function. 23 Q. Do you know, was there a configuration 24 mode in TOPS-20 to your knowledge? 25 A. TOPS-20 had the benefit of files. So,</p> <p style="text-align: right;">Page 49</p>

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<p>1 Exhibit 405 is a one-page document</p> <p>2 marked CSI-CLI-00746924.</p> <p>3 Exhibit 406 begins CSI-CLI-01828732,</p> <p>4 and for this document I'll read the last number</p> <p>5 because I think we're all unclear whether it is</p> <p>6 one versus multiple documents. This ends with</p> <p>7 Bates stamp CSI-CLI-01828783.</p> <p>8 Exhibit 407 begins Bates stamp</p> <p>9 CSI-CLI-01295215.</p> <p>10 And Exhibit 408 begins</p> <p>11 CSI-CLI-01295181.</p> <p>12 MR. NEUKOM: Thanks all.</p> <p>13 MR. FERRALL: Agreed. Thank you.</p> <p>14 (The deposition concluded at 3:31 p.m.)</p> <p>15 -oo0oo-</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 166</p>	<p>1 REPORTER'S CERTIFICATE</p> <p>2</p> <p>3</p> <p>4 I, BROOKE R. BOHR, a Notary Public in</p> <p>5 and for the State of Idaho, do hereby certify:</p> <p>6 That prior to being examined, the</p> <p>7 witness named in the foregoing deposition was by</p> <p>8 me duly sworn to testify the truth, the whole</p> <p>9 truth, and nothing but the truth;</p> <p>10 That said deposition was taken down by</p> <p>11 me in shorthand at the time and place therein</p> <p>12 named and thereafter reduced into typewriting</p> <p>13 under my direction, and that the foregoing</p> <p>14 transcript contains a full, true, and verbatim</p> <p>15 record of the said deposition.</p> <p>16 I further certify that I have no</p> <p>17 interest in the event of the action.</p> <p>18 WITNESS my hand and seal March 30, 2016.</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23 <%signature%></p> <p>24 Brooke R. Bohr</p> <p>25 CSR No. 753</p> <p style="text-align: right;">Page 168</p>
<p>1 VERIFICATION</p> <p>2 I declare under penalty of perjury</p> <p>3 under the laws that the foregoing is</p> <p>4 true and correct.</p> <p>5</p> <p>6 Executed on _____, 20 __,</p> <p>7 at _____.</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12 _____</p> <p>13 WITNESS SIGNATURE</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p style="text-align: right;">Page 167</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>